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THE LAUNCHING OF A UNIVERSITY







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Daniel C. Gilman

Baltimore, 1905.

THE LAUNCHING OF A UNIVERSITY

AND OTHER PAPERS

A SHEAF OF REMEMBRANCES

BY

DANIEL COIT GILMAN, LL.D.

PRESIDENT EMERITUS
OF THE JOHNS HOPKINS UNIVERSITY



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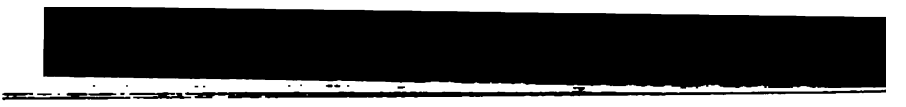
PREFACE

It has been my good fortune to be often invited, in different parts of the country, to deliver addresses on important occasions, most of them historical and educational. Those which have been printed in pamphlet form are now lost to sight almost as completely as those which rest in manuscript destined to the fire. Consequently the following pages have been brought together in the hope that by their perusal some of my colleagues and friends, and especially those whom I have known as students, will find that pleasant reminiscences are awakened.

The first three articles were contributed to *Scribner's Magazine* and are included in this volume by the kind permission of the publishers, Messrs. Charles Scribner's Sons, and the editor, Mr. E. L. Burlingame; and one of the articles printed in the *Century Magazine* is likewise reprinted by the kind permission of the publishers. I have not hesitated, now and then, to enlarge these papers, and I have added some articles hitherto unpublished.

Nothing is here included which appeared in an earlier volume, entitled *University Problems*.

Baltimore, *December, 1905*.



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REMINISCENCES OF THIRTY YEARS IN BALTIMORE—1875-1905



The Launching of a University

I

REMINISCENCES OF THIRTY YEARS IN BALTIMORE
1875-1905

DURING the last half century American universities have grown up with surprising rapidity. It is not necessary to fix an exact date for the beginning of this progress. Some would like to say that the foundation of the Lawrence Scientific School in Harvard University, and, almost simultaneously, the foundation of the Sheffield School of Science in New Haven were initial undertakings. These events indicated that the two oldest colleges of New England were ready to introduce instruction of an advanced character, far more special than ever before, in the various branches of natural and physical science. An impulse was given by the passage of the Morrill Act, by which a large amount of scrip, representing public lands, was offered to any State that would maintain a college devoted to agriculture and the mechanic arts, without the exclusion of other scientific and literary studies. The foundation of Cornell University was of the highest significance, for it fortunately came under the guidance of one who was equally devoted to historical and scientific research, one whose plans showed an independence of thought and a power of organisation then without precedent in the field of higher education. The changes introduced in Harvard, under masterful leadership, when the modern era of progress began, had profound influence. The subse-

quent gifts of Johns Hopkins, of Rockefeller, of Stanford, of Tulane, promoted the establishment of new institutions, in sympathy with the older colleges, yet freer to introduce new subjects and new methods. The State universities of the Northwest and of the Pacific coast, as population and wealth increased, became an important factor. These multiform agencies must all be carefully considered when an estimate is made up of the progress of the last half-century.

I was a close observer of the changes which were introduced at Yale in the fifties and sixties, the grafting of a new branch—"a wild olive," as it seemed—upon the old stock. Then I had some experience, brief but significant, in California, as the head of the State University, at a time when it was needful to answer the popular cry that it should become chiefly a school of agriculture, and when it was important to show the distinction between a university and a polytechnic institute. Then came a call to the East and a service of more than a quarter of a century in the organisation and development of a new establishment. These are three typical institutions. Yale was a colonial foundation, wedded to precedents, where an effort was made to introduce new studies and new methods. California was a State institution, benefited by the so-called agricultural grant, where it was necessary to emphasise the importance of the liberal arts, in a community where the practical arts were sure to take care of themselves. Baltimore afforded an opportunity to develop a private endowment free from ecclesiastical or political control, where from the beginning the old and the new, the humanities and the sciences, theory and practice, could be generously promoted.

In looking over this period, remarkable changes are manifest. In the first place, science receives an amount of support unknown before. This is a natural consequence of the wonderful discoveries which have been made in respect to the

phenomena and laws of nature and the improvements made in scientific instruments and researches. Educational leaders perceived the importance of the work carried on in laboratories and observatories under the impulse of such men as Liebig and Faraday. With this increased attention to science, the old-fashioned curriculum disappeared, of necessity, and many combinations of studies were permitted in the most conservative institutions. Absolute freedom of choice is now allowed in many places. Historical and political science has come to the front, and it is no longer enough to learn from a text-book wearisome lists of names and dates; reference must be made to original sources of information, or, at any rate, many books must be consulted in order to understand the progress of human society. Some knowledge of German and French is required of everyone. English literature receives an amount of attention never given to it in early days. Medicine is no longer taught by lectures only, but the better schools require continued practice in biological laboratories and the subsequent observation of patients in hospitals and dispensaries. The admission of women to the advantages of higher education is also one of the most noteworthy advances of the period we are considering.

The historian who takes up these and allied indications of the progress of American universities will have a difficult and an inspiring theme. It has been a delightful and exhilarating time in which to live and to work, to observe and to try. All the obstacles have not been overcome, some mistakes have been made, much remains for improvement, but on the whole the record of the last forty or fifty years exhibits substantial and satisfactory gains. The efforts of scholars have been sustained by the munificence of donors, and more than one institution now has an endowment larger than that of all the institutions which were in existence in 1850.

In the middle of the century the word "university" was

in the air. It was cautiously used in Cambridge and New Haven, where a number of professional schools were living vigorous lives near the parental domicile, then called "the college proper," as if the junior departments were colleges improper. To speak of "our university" savoured of pretence in these old colleges. A story was told at Yale that a dignitary from a distant State introduced himself as chancellor of the university. "How large a faculty have you?" asked Dominie Day. "Not any," was the answer. "Have you any library or buildings?" "Not yet," replied the visitor. "Any endowment?" "None," came the monotonous and saddening negative. "What have you?" persisted the Yale president. The visitor brightened as he said, "We have a very good charter."

Among enlightened and well-read people, the proper significance of a university was of course understood. Students came home from Europe, and especially from Germany, with clear conceptions of its scope. Everett, Bancroft, Ticknor, Hedge, Woolsey, Thacher, Whitney, Child, Gould, Lane, Gildersleeve and others were familiar with the courses of illustrious teachers on the Continent. European scholars were added to the American faculties—Follen, Beck, Lieber, Agassiz, Guyot, and others also distinguished. But the American colleges had been based on the idea of an English college, and upon this central nucleus the limited funds and the unlimited energies of the times were concentrated, not indeed exclusively, but diligently. Any diversion of the concentrated resources of the treasury to "outside" interests, like law, medicine, and theology, was not to be thought of. Even now, one hears occasionally the question, "After all, what *is* the difference between a university and a college?" To certain persons, the university simply means the best place of instruction that the locality can secure. The country is full of praiseworthy foundations which ought to be known as high-schools or academies or possibly as colleges,

but which appear to great disadvantage under the more pretentious name they have assumed. Just after the war the enthusiastic sympathy of the North for the enfranchised blacks led to the bestowal of the highest term in educational nomenclature upon the institutes where the freedmen were to be taught. Fortunately, Hampton and Tuskegee escaped this christening, but Fiske, Atlanta, and Howard foundations were thus named. It is nearer the truth to say that the complete university includes four faculties—the liberal arts or philosophy, law, medicine, and theology. Sometimes a university is regarded as the union, under one board of control, of all the highest institutions of a place or region. There is one instance,—the State of New York,—where the name "university" is given to a board which in a general way supervises all the degree-giving institutions in the State.

When the announcement was made to the public, at the end of 1873, that a wealthy merchant of Baltimore had provided by his will for the establishment of a new university, a good deal of latent regret was felt because the country seemed to have already more higher seminaries than it could supply with teachers, students, or funds. Another "college" was expected to join the crowded column, and impoverish its neighbours by its superior attractions. Fortunately, the founder was wise as well as generous. He used the simplest phrases to express his wishes; and he did not define the distinguished name that he bestowed upon his child, nor embarrass its future by needless conditions. Details were left to a sagacious body of trustees whom he charged with the duty of supervision. They travelled east and west, brought to Baltimore experienced advisers, Eliot, Angell, and White, and procured many of the latest books that discussed the problem of education. By and by they chose a president, and accepted his suggestion that they should give emphasis to the word "university" and should endeavour

to build up an institution quite different from a "college," thus making an addition to American education, not introducing a rival. Young men who had already gone through that period of mental discipline which commonly leads to the baccalaureate degree were invited to come and pursue those advanced studies for which they might have been prepared, and to accept the inspiration and guidance of professors selected because of acknowledged distinction or of special aptitudes. Among the phrases that were employed to indicate the project were many which then were novel, although they are now the commonplaces of catalogues and speeches.

Opportunities for advanced, not professional, studies were then scanty in this country. In the older colleges certain graduate courses were attended by a small number of followers—but the teachers were for the most part absorbed with undergraduate instruction, and could give but little time to the few who sought their guidance. Probably my experience was not unusual. After taking the degree of Bachelor of Arts in Yale College, I was undecided what profession to follow. The effect of the collegiate discipline, which "introduced" me, according to the phrase of the day, to not less than twenty subjects in the senior year, was to arouse an interest of about equal intensity in as many branches of knowledge. I remained a year at New Haven as a resident graduate. President Woolsey, whom I consulted, asked me to read Rau's political economy and come and tell him its contents; I did not accept the challenge. I asked Professor Hadley if I might read Greek with him; he declined my proposal. Professor Porter did give me some guidance in reading, especially in German. I had many talks of an inspiring nature with Professor Dana—but, on the whole, I think that the year was wasted. The next autumn I went to Cambridge and called upon President Sparks, to learn what opportunities were there open. "You

can hear Professor Agassiz lecture," he said, "if you want to; and I believe Mr. Longfellow is reading Dante with a class." I did not find at Cambridge any better opportunities than I had found at New Haven—but in both places I learned to admire the great teachers, and to wish that there were better arrangements for enabling a graduate student to ascertain what could be enjoyed and to profit by the opportunities.

As the day has now come when there is almost a superfluity of advanced courses, let me tell some of the conditions which brought the Johns Hopkins foundations into close relations with these upward and onward movements.

Before a university can be launched there are six requisites: An idea; capital, to make the ideal feasible; a definite plan; an able staff of coadjutors; books and apparatus; students. On each of these points I shall briefly dwell, conscious of one advantage as a writer—conscious, also, of a disadvantage. I have the advantage of knowing more than anyone else of an unwritten chapter of history; the disadvantage of not being able or disposed to tell the half that I remember.

"The idea of the university" was a phrase to which Cardinal Newman had given currency in a remarkable series of letters in which he advocated the establishment of a Catholic foundation in Dublin. At a time when ecclesiastical or denominational colleges were at the front, and were considered by many people the only defensible places for the education of young men, his utterances for academic freedom were emancipating; at a time when early specialisation was advocated, his defence of liberal culture was reassuring. The evidence elicited by the British university commissions was instructive, and the writings of Mark Pattison, Dr. Appleton, Matthew Arnold, and others were full of suggestions. Innumerable essays and pamphlets had appeared in Germany discussing the improvements which

were called for in that land of research. The endeavours of the new men at Cambridge and New Haven, and the instructive success of the University of Virginia, were all brought under consideration. Under these favourable circumstances, *Zeit-geist* they may be called, the Johns Hopkins was founded upon the idea of a university as distinct from a college.

The capital was provided by a single individual. No public meeting was ever held to promote subscriptions or to advocate higher education; no speculation in land was proposed; no financial gains were expected; no religious body was involved, not even the Society of orthodox Friends, in which the founder had been trained, and from which he selected several of his confidential advisers. He gave what seemed at the time a princely gift; he supplemented it with an equal gift for a hospital. It was natural that he should also give his name. That was then the fashion. John Harvard and Elihu Yale had lived long ago, and they never sought the remembrance which their contemporaries insured; but in late years Girard, Smithson, Lawrence, Cornell, and Cooper, had all regarded their foundations as children entitled to bear the parental name. Their follower in Maryland did likewise.

It is always interesting to know the genesis of great gifts. Johns Hopkins, who had never married, was in doubt, when he grew old, respecting the bestowal of his acquisitions. The story is current that a sagacious friend said to him, "There are two things which are sure to live—a university, for there will always be the youth to train; and a hospital, for there will always be the suffering to relieve." This germ, implanted in a large brain, soon bore fruit.

There is another story which is worth repeating, for it shows the relation of one benefaction to another. When George Peabody, near the end of his life, came to Balti-

more, the place of his former residence, he was invited to dine by Mr. John W. Garrett, and Mr. Hopkins was invited to meet him. It is my impression that they were alone at the table. The substance of Mr. Peabody's remarks has thus been given by the host:

"Mr. Hopkins," said the famous London banker, "we both commenced our commercial life in Baltimore, and we knew each other well. I left Baltimore for London, and from the commencement of my busy life I must state that I was extremely fond of money, and very happy in acquiring it. I laboured, struggled, and economised continuously and increased my store, and I have been very proud of my achievements. Leaving Baltimore, after a successful career in a relatively limited sphere, I began in London, the seat of the greatest intellectual forces connected with commerce, and there I succeeded wonderfully, and, in competition with houses that had been wealthy, prosperous, and famous for generations, I carved my way to opulence. It is due to you, Mr. Hopkins, to say, remembering you so well, that you are the only man I have met in all my experience more thoroughly anxious to make money and more determined to succeed than myself; and you have enjoyed the pleasure of success, too. In vigorous efforts for mercantile power, capital, of course, and large capital, was vital. I had the satisfaction, as you have had, of feeling that success is the test of merit, and I was happy in the view that I was in this sense, at least, very meritorious. You also have enjoyed a great share of success and of commercial power and honour. But, Mr. Hopkins, though my progress was for a long period satisfactory and gratifying, yet, when age came upon me, and when aches and pains made me realise that I was not immortal, I felt, after taking care of my relatives, great anxiety to place the millions that I had accumulated so as to accomplish the greatest good for humanity. I looked about me and formed

the conclusion that there were men who were just as anxious to work with integrity and faithfulness, for the comfort, consolation, and advancement of the suffering and the struggling poor, as I had been to gather fortune. After careful consideration, I called a number of my friends in whom I had confidence to meet me, and I proposed that they should act as my trustees, and I organised my first scheme of benevolence. The trust was accepted, and I then for the first time felt there was a higher pleasure and a greater happiness than accumulating money, and that was derived from giving it for good and humane purposes; and so, sir, I have gone on, and from that day realised, with increasing enjoyment, the pleasure of arranging for the greatest practicable good for those who would need my means to aid their well-being, progress, and happiness."

Given the idea and the funds, the next requisite was a plan. In my first interviews with the trustees, I was strongly impressed by their desire to do the very best that was possible under the circumstances in which they were placed. We quickly reached concurrence. Without dissent, it was agreed that we were to develop, if possible, something more than a local institution, and were at least to aim at national influence; that we should try to supplement, and not supplant, existing colleges, and should endeavour to bring to Baltimore, as teachers and as students, the ablest minds that we could attract. It was understood that we should postpone all questions of building, dormitories, commons, discipline, and degrees; that we should hire or buy in the heart of the city a temporary perch, and remain on it until we could determine what wants should be revealed, and until we could decide upon future buildings. We were to await the choice of a faculty before we matured any schemes of examination, instruction, and graduation.

I was encouraged to travel freely at home and abroad.

Among many men of distinction whom I met on these journeys, I shall in passing mention several. In Oxford, Cambridge, Glasgow, Dublin, and Manchester much interest was shown in our new undertaking. A confidential talk with Dr. Jowett, the head of Balliol College, comes often to mind. I remember vividly and with special pleasure my visit to Lord Kelvin in his laboratory in the University of Glasgow, and a dinner with the X Club in London, to which Professor Tyndall invited me, and where I met Spencer, Hooker, Huxley, Frankland, and other leaders of science. The story of this club is given in Huxley's memoirs. To many leaders in the profession of medicine I was introduced by Dr. John S. Billings. On the Continent I visited Paris, Berlin, Heidelberg, Strasburg, Freiburg, Leipsic, Munich, and Vienna. In all these places the laboratories were new and were even more impressive than the libraries. Everywhere the problems of higher education were under discussion; everywhere, readiness to be helpful and suggestive was apparent. One Sunday afternoon I sat for a long while on the vine-clad hill of Freiburg, looking at the beautiful spire of the cathedral and talking with the historian, Professor Von Holst—already well acquainted with American conditions. He became one of our lecturers, and afterward took part in the development of the University of Chicago. He gave me an inside view of the workings of the German University system. Professor James Bryce was a most serviceable interpreter of the intricacies of Oxford and Cambridge. Through a college classmate who had become an *agrégé* in the University of France, I had a similar introduction to the methods of the French. Among my note-books I think there is one in which, while at Oxford, in the autumn of 1875, I drew up an outline of the possible organisation of our work in Baltimore. It was brief, but it was also comprehensive.

The first real difficulty was the selection of a faculty.

Of this I shall speak in some subsequent pages. Here it is enough to say that the announcement was boldly made that the best men who could be found would be first appointed without respect to the place from which they came, the college wherein they were trained, or the religious body to which they belonged. The effort would be made to secure the best men who were free to accept positions in a new, uncertain, and, it must be acknowledged, somewhat risky organisation. I will not recall the overtures made to men of mark, nor the overtures received from men of no mark. Nor can I say whether it was harder to eliminate from the list of candidates the second best, or to secure the best.

All this it is well to forget. When I die, the memory of those anxieties and perplexities will forever disappear. It is enough to remember that Sylvester, Gildersleeve, Remsen, Rowland, Morris, and Martin were the first professors. As a faculty "we were seven." Our education, our antecedents, our peculiarities were very different, but we were full of enthusiasm, and we got on together without a discordant note. Four of the six are dead; one is still as vigorous and incisive as ever; one is now President. An able corps of associates, lecturers, and fellows was appointed with the professors, and they were admirable helpers in the inception of the work.

The recent death of Professor Rowland has brought his name before the public, and I have often been asked how at the age of twenty-eight he was selected for the important chair of physics. The facts are these.

While on service as a member of the Board of Visitors at West Point in the summer of 1875, I became well acquainted with General Michie, then professor of physics in the United States Military Academy. I asked him who there was that could be considered for our chair of physics. He told me that there was a young man in Troy, of whom

probably I had not heard, whom he had met at the house of Professor Forsyth and who seemed to him full of promise.

"What has he done?" I said.

"He has lately published an article in the *Philosophical Magazine*," was his reply, "which shows great ability. If you want a young man you had better talk with him."

"Why did he publish it in London," said I, "and not in the *American Journal?*"

"Because it was turned down by the American editors," he said, "and the writer at once forwarded it to Professor Clerk Maxwell, who sent it to the English periodical."

This at once arrested my attention and we telegraphed to Mr. Rowland to come from Troy, where he was an assistant instructor in the Rensselaer Polytechnic Institute. He came at once and we walked up and down Kosciusko's Garden, talking over his plans and ours. He told me in detail of his correspondence with Maxwell, and I think he showed me the letters received from him. At any rate, it was obvious that I was in confidential relations with a young man of rare intellectual powers and of uncommon aptitude for experimental science. When I reported the facts to the trustees in Baltimore they said at once, "Engage that young man and take him with you to Europe, where he may follow the leaders in his science and be ready for a professorship." And this was done. His subsequent career is well known.

The purchase of books and apparatus is of but little interest to the public, so I pass that subject by, and will proceed at once to the sixth requisite. After plans had been formed and teachers installed, the question was still open, Where are the students? We were very fortunate in those that came to us. They were not many at first, and it was comparatively easy to become acquainted with every one. Among the pleasantest recollections of my life are the relations which I have held with the young men among whom

my lot has been cast. In later years the numbers have been large, the helpers many, so that I have not been quite as fortunate, but for a long while I was brought into close acquaintance with every student. This half-official, half-fraternal intercourse has ripened into life-long friendships. In Baltimore, I have always regarded the original body of fellows as the advance-guard, carefully chosen, well taught, and quickly promoted. Without exception these twenty men soon won distinction. Most of them are happily living—so I will not dwell upon their merits; but of two Associates who have lately passed away I will say a few words.

Professor Adams came to us at the very opening of the university, fresh from his studies under Bluntschli in Heidelberg. He quickly showed the rare qualities which were manifest through his life—enthusiasm, application, versatility, and a generous appreciation of others. His mind was suggestive, capable of forming wise plans, and quick in devising the methods by which those plans could be carried out. A remarkable trait was the power of perceiving the adaptation of his scholars to such posts as were open. He could almost always suggest the right man for a given vacancy; and he was just as ready to deter one that he thought unsuitable from seeking a place beyond his powers.

He began at an early day what was not exactly an association nor a seminary, but a weekly reunion of the teachers and scholars in the department of historical and political science. These meetings were stimulating to all who took part in them, and while the leadership fell upon Dr. Adams, many men of distinction came to the gatherings and did their part in making them of interest. He also initiated that remarkable series of publications, which continued under his editorship until his death—a repository of memoirs, longer and shorter, pertaining to American institutional history. He edited for the Bureau of Education a

series of monographs on instruction in the various States of the Union. To his bright mind (I suspect), the idea of forming an American historical association is due. Certainly he was in its early days the most efficient promoter of that society, and he continued to be, until his health broke down, the secretary and the editor of the annual reports.

After all, surely, his highest service was in the art of inspiring others; and when I think of those who came under his influence, Woodrow Wilson, Albert Shaw, J. F. Jameson, Charles H. Levermore, D. R. Dewey, F. W. Blackmar, B. C. Steiner, W. W. and W. F. Willoughby, C. H. Haskins, Charles M. Andrews, F. J. Turner, J. M. Vincent, J. H. Hollander, and many more, it seems to me that no higher achievement could have been attained by him, no greater reward secured.

Before it was publicly known that Professor Sylvester was to have charge of our mathematical work, Thomas Craig, from Lafayette College, inquired of me whether Sylvester was coming to us. Now, Sylvester had no popular reputation. His writings were diffused through a multitude of scientific journals, and he had never published them in separate volumes. I was surprised by the inquiry of a youthful schoolmaster from the country, and said, "What do you know about Professor Sylvester?" His reply was, "Not to know the name of Sylvester, is to know nothing of modern mathematics." I said, "Very true, but is that all you know of him?" He then acknowledged that he had read some of the memoirs of this illustrious geometer. Then I asked what made him think that Sylvester was coming. He said that Professor Peirce, of Harvard, had told him. "Do you know Professor Peirce?" said I. "Not personally," was his reply, "but I have had several letters from him, and in one of them he told me that I ought to go to Baltimore and study with Sylvester." So I took the young man into confidence and told him that, although the

arrangements were not perfected, we did expect the co-operation of this English savant. The young man came to us and accepted one of the fellowships, and from that time onward until his health gave way he was a brilliant member of our mathematical corps. He became the successor of Sylvester and the associate of Newcomb in the editorial control of the *American Journal of Mathematics* and was thus brought into personal relations with most of the renowned mathematicians of Europe, whose letters as they lie before me indicate their respect for their American correspondent. His text-books were used at one time in the University of Cambridge, England, and his other mathematical writings were of distinct value, though they were not numerous.

Among the early students one of the most brilliant was Dr. Keeler, latterly director of the Lick Astronomical Observatory, in California. He came of good New England stock, but had been far away from all opportunities of superior education at his home in Florida. One day he appeared in Baltimore and asked leave to be received as a student in optics. A visitor in Florida, Mr. Charles H. Rockwell, an amateur astronomer of unusual ability, had seen him engaged in surveying land with a theodolite of his own construction, and had asked the future astronomer what career he wished to follow. Keeler replied, "I should like to be an optician." With remarkable insight Mr. Rockwell encouraged him to go to Cambridge and consult with Alvan Clark. This maker of telescopes said: "I cannot receive you as a student; go to the Sheffield School in New Haven and see what they will do for you." At New Haven they told him, "Go to Baltimore and work with Dr. Hastings." So he came to us. His means were very small, and he was glad to earn a little money by the making of diagrams, by drawing a plot of our grounds, and in other ways. He showed so much ability that he was encouraged

to clear off our requirements for matriculation (which he did under the personal instruction of Professor Charles D. Morris), and subsequently he proceeded to the degree of Bachelor of Arts. Not long afterward he went to California with Professor Langley and aided him in original investigations respecting the heat of the sun, on the summit of Mount Whitney. He became an observer in the Allegheny Observatory, and finally he ended his career while in charge of the great instrument at the Lick Observatory, on Mount Hamilton, California, having won the highest recognition from all the astronomers of his day.

These are by no means the only examples that occur to me of brilliant young men whom we were at once able to encourage. The list is long. Fortunately most of them are still winning reputation. Whatever service we have rendered them is largely due to the freedom of our methods, and to the close contact which has prevailed between the leading scholars and those that have come under their guidance, and above all to the brilliant and learned men whose influence, often unconscious, has been the most potent factor in the university at Baltimore. Thus with the six requisites, an idea, a plan, an endowment, a faculty, apparatus, and students, we proceeded to launch our bark upon the Patapsco.

As the day drew near for the opening of our doors and the beginning of instruction the word reached us that Professor Huxley of London was coming to this country. We had already decided that, in view of the attention which was to be given to medicine, biology should receive a large amount of attention, more than ever before in America. That meant the study, in the laboratory, of vegetable and animal forms and functions, so that the eyes and hands and brains of the students might become prepared for the study of the human body in health and in disease. Huxley, among English-speaking people, was the leader in these

studies. His repute as an investigator was very high, and as the popular interpreter and defender of biological investigations he was without a peer. His acquaintance with the problems of medical education was also well known. As a public speaker upon scientific subjects there was no superior. He had rendered us a service by nominating Dr. Martin to the professorship of biology. The moment was opportune for informing the public, through the speech of this master, in respect to the requirements of modern medicine and the value of biological research. I do not suppose that anyone connected with the university had thought of the popular hostility toward biology. We did not know that to many persons this mysterious term was like a red flag of warning. The fact that some naturalists were considered irreligious filled the air with suspicions that the new foundation would be handed over to the Evil One. The sequel will show what happened. Professor Huxley was invited; he accepted, he came to Baltimore, he addressed a crowded assembly—then came a storm.

An amusing incident in this visit has been told by his biographer; but as my recollections differ in slight details, I will tell the story in my own way.

On his arrival in Baltimore, Professor Huxley was driven to the country seat of Mr. Garrett, who had offered him hospitality and had invited a large company to meet him in an afternoon party. There was but one intervening day between his arrival, tired out by a long journey in the interior, and his delivery of the address. He had hardly reached the residence of his host before the reporters discovered him and asked for the manuscript of his speech. "Manuscript?" he said, "I have none. I shall speak freely on a theme with which I am quite familiar." "Well, professor," said the interlocutor, "that is all right, but our instructions are to send the speech to the papers in New York, and if you cannot give us the copy, we must take it

down as well as we can and telegraph it, for the Associated Press is bound to print it the morning after it is spoken." This was appalling, for in view of the possible inaccuracy of the short-hand, and the possible condensation of the wire-hand, the lecturer was afraid that technical and scientific terms might not be rightly reproduced. "You can have your choice, professor," said the urbane reporter, "to give us the copy or to let us do the best we can; for report the speech we shall." The professor yielded, and the next day he walked up and down in his room at Mr. Garrett's, dictating to a stenographer, in cold and irresponsive seclusion, the speech which he expected to make before a receptive and hospitable assembly.

I sat very near the orator as he delivered the address in the Academy of Music, and noticed that, although he kept looking at the pile of manuscript on the desk before him, he did not turn the pages over. The speech was appropriate and well received, but it had no glow, and the orator did not equal his reputation for charm and persuasiveness. When the applause was over, I said to Mr. Huxley, "I noticed that you did not read your address; I am afraid the light was insufficient." "Oh," said he, "that was not the matter. I have been in distress. The reporters brought me, according to their promise, the copy of their notes. It was on thin translucent paper, and to make it legible, they put clean white sheets between the leaves. That made such bulk that I removed the intermediate leaves, and when I stood up at the desk I found I could not read a sentence. So I have been in a dilemma—not daring to speak freely, and trying to recall what I dictated yesterday and allowed the reporters to send to New York." If he used an epithet before the word "reporters" I am sure he was justified, but I forget what it was.

Those of us who wanted guidance and encouragement from a leading advocate of biological studies were rewarded

and gratified by the address, and have often referred to it as it was printed in his American discourses and afterward in his collected works.

We had sowed the wind and were to reap the whirlwind. The address had not been accompanied by any accessories except the presentation of the speaker, no other speech, no music, no opening prayer, no benediction. I had proposed to two of the most religious trustees that there should be an introductory prayer, and they had said no, preferring that the discourse should be given as popular lectures are given at the Peabody Institute and elsewhere, without note or comment.

It happened that a correspondent of one of the religious weeklies in New York was present, and he wrote a sensational letter to his paper, calling attention to the fact that there was no prayer. This was the storm-signal. Many people who thought that a university, like a college, could not succeed unless it was under some denominational control, were sure that this opening discourse was but an overture to the play of irreligious and anti-religious actors. Vain it was to mention the unquestioned orthodoxy of the trustees, and the ecclesiastical ties of those who had been selected to be the professors. Huxley was bad enough; Huxley without a prayer was intolerable.

Some weeks afterward a letter came into my hands addressed to a Presbyterian minister of Baltimore, by a Presbyterian minister of New York. Both have now gone where such trifles have no importance, so I venture to give the letter, quoting from the autograph. The italics are mine:

"NEW YORK, 3 Oct., 1876.

"Thanks for your letter, my friend, and the information you give. The University advertised Huxley's Lecture as the 'Opening' and so produced the impression which a Baltimore correspondent increased by taking the thing as it was announced. *It was bad*

enough to invite Huxley. It were better to have asked God to be present. It would have been absurd to ask them both.

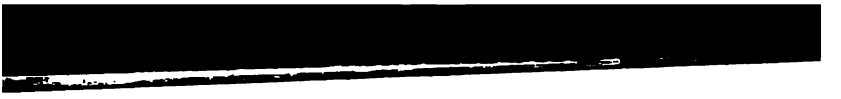
"I am sorry Gilman began with Huxley. But it is possible yet to redeem the University from the stain of such a beginning. No one will be more ready than I to herald a better sign."

It was several years before the black eye gained its natural colour. People were on the alert for impiety, and were disappointed to find no traces of it—that the faculty was made up of just such men as were found in other faculties, and that in their private characters and their public utterances there was nothing to awaken suspicion or justify mistrust. It was a curious fact, unobserved and perhaps unknown, that four of the first seven professors came from the families of gospel ministers, and a fifth of the group of six was a former Fellow of Oriel and a man of quite unusual devoutness. The truth is that the public had been so wonted to regard colleges as religious foundations, and so used to their control by ministers, that it was not easy to accept at once the idea of an undenominational foundation controlled by laymen. Harvard and Cornell have both encountered the like animosity. At length the prejudice wore away without any manifesto or explanation from the authorities. From the beginning there was a voluntary assembly daily held for Christian worship; soon the Young Men's Christian Association was engrafted; the students became active in the churches and Sunday-schools and charities of Baltimore; some graduates entered the ministry, and one became a bishop, while the advanced courses in Hebrew, Greek, history, and philosophy, were followed by ministers of many Protestant denominations, Catholic priests and Jewish rabbis. It is also gratifying to remember that many of the ministers of Baltimore, Presbyterian, Episcopalian, Methodist, and Baptist, have intrusted their sons to the guidance of the local seminary whose influence and instructions they could readily watch and carefully

estimate. As I consider the situation, I wish it were possible for religious people to agree upon what should be taught to the young, in respect to religious doctrine, or at least to unite in religious worship, yet I cannot forget that, in ages and in countries where one authority has been recognised and obeyed, neither intellect nor morals have attained their highest development.



JOHNS HOPKINS AND THE TRUSTEES OF HIS CHOICE



II

JOHNS HOPKINS AND THE TRUSTEES OF HIS CHOICE

THE death of Johns Hopkins occurred December 24, 1873, when he was well advanced in his seventy-ninth year. He was widely known and respected in Maryland, Virginia, and North Carolina, as a merchant who had accumulated a large fortune by habits of industry and frugality, and by great financial ability. In his later years he was among the foremost of the moneyed men of Baltimore, which had been the place of his residence since he came to it as a boy from his country home in Anne Arundel County. He was President of the Merchants' National Bank, one of the most important banks of the city, and he was for many years a Director of the Baltimore and Ohio Railroad, and, of course, familiar with its financial affairs. His forbears were among the early settlers of Maryland, and he grew up in the habits of integrity, temperance and religion characteristic of the Society of Friends, to which his parents belonged. His sisters looked after his household; and one of his nieces has told me how well she remembers that he loved to gather around his table the brightest and most intellectual people of the community—in winter, at the stately dwelling-house still standing in Saratoga Street, near Charles Street (next to the rectory of St. Paul's Church), and in summer, at a spacious mansion, surrounded by trees, lawns, and gardens, two miles from the heart of the city. His estate, which was known as Clifton, is now one of the system of parks surrounding the city of Baltimore—Druid Hill, Wyman, Homewood, Montebello, Clifton,

and Patterson—a suburban circle of great beauty, affording recreation and enjoyment to the inhabitants of every part of the city.

Johns Hopkins was not a man who cared for display, or who could approve extravagance or luxury. In town he had his books and pictures, and in the country he enjoyed the flowers, trees, and shrubs which were cultivated at Clifton. The economical habits of his youth continued with him to the end of his days. Yet he was not unmindful of the obligations of a rich man to the place of his residence, and he made generous gifts to the Maryland Institute, the Young Men's Christian Association, and to other objects. Many instances are remembered of the aid which he gave to young men who needed financial support and in whose character he confided. There are no indications that he ever paid much attention to educational or philanthropic work. He did not care to travel, and there is no record of his visits to public institutions for the promotion of charity or learning.

Several years before his death he caused two corporations to be formed for the maintenance, the one of a hospital, and the other of a university. Their existence was, of course, made known to the public, and when he died there was great curiosity as to the amount set apart for their endowment and as to the conditions. It presently appeared that, after provisions for his nearest of kin and other legacies, seven millions of dollars would be equally divided between the two institutions which were to perpetuate his name. He had demonstrated by his own experience an ancient saying of which he may never have heard: "Magnum vectigal est parsimonium." To the university he gave his estate at Clifton, and the shares which he owned in the Baltimore and Ohio Railroad; and to the hospital he gave a large number of warehouses, and a valuable site which he had bought for the hospital.

As a sort of supplement to the will, a remarkable letter was addressed to the trustees of the hospital, in which, with great sagacity, the founder directed that the hospital, when completed, should be a part of the medical school, for which provision was made in the university which he founded. Much depended on this important provision. The two Boards of Control, holding separate purses, and meeting separately, have acted in accord. Originally nine of the twelve trustees were trustees in both corporations, and although this proportion has not been uniformly maintained, the importance of official co-operation has never been forgotten. From the beginning it has been clearly understood and acknowledged that the sphere of the University was education, and the sphere of the Hospital the relief of suffering.

The selection of trustees for the discharge of great responsibilities is always perplexing. They must not only be men of honour, wise and unselfish, but they must be able to get on with one another. The board must include so many persons that a diversity of views may be represented; it must be so limited that the personal attention of every member is secured. Probably the world recognises chiefly the largeness of Johns Hopkins' bounty, its largeness in amount, in scope, and in freedom from minor restrictions; but he might have failed in the choice of men to administer his trust. On the contrary, he made a capital selection, from among laymen, resident in Baltimore, in middle life, independent, and acquainted with affairs.

Yet he was not infallible, as was shown by his absolute confidence in the prosperity of the Baltimore and Ohio Railroad, which was indicated by his legacy to the University of fifteen thousand shares in that company, and by his injunction to the trustees to watch over and protect the interests of the road. At that time the road paid annually ten per cent. dividends, and it was understood that a large

dividend, share-for-share, would be declared at an early day, from undistributed increments. The shares were then quoted at nearly 200, the par being 100. Under these circumstances, it did not then appear strange that when the board was organised, several years before the death of the founder, the chairman of the finance committee of the railroad, Mr. Galloway Cheston, was made president of the trustees of the University, and Mr. John W. Garrett, the president of the Baltimore and Ohio Railroad, was made chairman of the finance committee in the University board. I mention these facts in order that the close union of these two corporations, which continued until the failure of the road to pay any dividends, may be borne in mind when the finances of the University are considered. The combination was most unfortunate. It was likewise a misfortune that so many eggs were placed in one basket, and that the founder explicitly advised that they be so carried.

Let me now characterise the men of his choice. Mr. Galloway Cheston, first president of the trustees, was a merchant of the highest credit, who sent his ships to distant ports, was careful in his investments and a good adviser in all financial matters. He was a man of the best social standing, fond of reading, a lover of flowers, extremely simple and unostentatious in his daily life, and a worshipper in the Society of Friends, to which his wife belonged, but with which he did not personally unite. He lived to an advanced age and died with the respect of all who knew him. As a presiding officer, he was excellent. His mode of conducting the business was exemplary. While he gave everyone a chance to be heard, he did not encourage wandering talk, and when he thought that enough had been said, he would put the question to the vote of his colleagues, and declare the decision.

The Honourable George W. Dobbin, who succeeded

Mr. Cheston as chairman of the board, was one of the judges of the Supreme Bench in Baltimore. He was keenly alive to the progress of modern science. He read those books and periodicals which recorded the latest discoveries. He attended scientific lectures. He maintained a workshop or laboratory at his country seat near Baltimore. He observed the heavens. He practised photography. He followed closely the modern development of electrical inventions. In the University councils science always had an earnest and intelligent advocate while Judge Dobbin was alive.

When death released him, far on in years, his successor in office was Charles Morton Stewart (not one of the original trustees), a merchant in every way qualified to take the place of Galloway Cheston. Like him, he sailed his ships in distant seas, and as a banker he was in close relations with distinguished firms in London and Paris, as well as in New York. He was a much younger man than either of his predecessors. He had received a liberal education, partly in Switzerland; he had travelled widely; and, as the father of several bright sons, he was eager to make the University so good in all respects that boys need not be sent away from Baltimore to secure their proper training. Five of his sons have proceeded to the degree of Bachelor of Arts. His hospitality at Cliff Holme, in the Green Spring Valley, and in town, his generosity and enthusiasm were limited only by his ability, and his ability was very great.

Closely associated with Judge Dobbin in the service of the University was the Chief Judge of the Supreme Bench in Baltimore, the Honourable George William Brown, a graduate of Rutgers College. He held the position of mayor at the outbreak of the Civil War; he gave the orders to burn the bridges which connected the city with the North, and he bravely marched at the head of the Massa-

chusetts regiments, for their protection, as they passed through the city in the face of an angry and defiant crowd. For reasons which were never promulgated, he suffered imprisonment in Fort Warren, doubtless because he was suspected of Southern sympathies. Of all these stirring events he has written the story. Judge Brown was a man of the highest personal character, a good writer, a good lawyer, a good citizen, always ready to promote the welfare of the city of his birth. In the Peabody Institute, the Pratt Library, the Maryland Historical Society, the Bar Library, as well as in the Johns Hopkins Hospital, he was a most faithful trustee. When he retired from the bench, the principal officers of these institutions addressed him a letter of admiration and affection.

While the persons who have been named gave dignity to the board and weight to its decisions, the labouring oar, at the outset, was intrusted to one who bore a name already distinguished throughout the land. Reverdy Johnson, Junior, was a good French and German scholar, who had taken his degree in law at Heidelberg, had travelled widely, loved books, and was thoroughly appreciative of all the conservative influences which tend to the promotion of knowledge. He was the chairman of the executive committee for many years, until his voluntary retirement from the board by reason of his advancing years and infirm health. He is the only one of the original trustees who is living as I write these pages. Mr. Johnson was not a man eager for novelties, and he did not care for any of those proceedings which awaken popular attention and applause. But when he was once persuaded as to the course which should be pursued, he was its efficient promoter. He was incessant in his attention to the business of the University, and, before the selection of the president, conducted its correspondence.

The services of Francis T. King were chiefly directed to the construction of the Johns Hopkins Hospital. He

was president of the Hospital board, and from the time that he assumed the responsibility, until his death, he was assiduous in watching every detail. He had the art of choosing good counsellors—one of the most serviceable being Dr. John S. Billings, U. S. A.—and the wisdom to accept their suggestions. He could not be hurried or driven, but steadily, with ample consideration, he directed the construction of that great group of buildings which embodied every important improvement that could be thought of for the conduct of an infirmary. The story of his labours belongs to the Hospital; but here it must be said that his presence in the University board was not nominal. His broad mind seized at once upon every question that came up, and while he was most useful in binding the Hospital and the University together, his influence was always felt in the discussion of other subjects.

The services of the Honourable Charles J. M. Gwinn were of fundamental importance. A graduate of Princeton, a leading member of the bar, and in later life Attorney-General of Maryland, his legal acumen and his powers of exact expression made him most serviceable in the preparation of legal documents and in the drafting of important papers. The will of the founder was drafted by him, and to him, in a large degree (as I believe), may be attributed the letter of Johns Hopkins in respect to medical education. He continued in the service of Johns Hopkins, as a member of the two boards, until his death.

Francis White, who married the niece of Johns Hopkins, was one of the three executors of his will, and the original treasurer. The other executors were Mr. King and Mr. Gwinn. Mr. White served the University without any compensation for a period of fully thirty years. He was cautious, attentive to details, well versed in financial affairs, and thoroughly interested in everything that promoted the welfare of the institution with whose entire history he was

intimately acquainted. When in town he was in attendance almost every day at the office of the University. He is entitled to credit and remembrance as a citizen who gave to the services of the public the best of his powers, without any sort of pecuniary recognition or advantage. One of the professorships is named after him, in recognition of a gift of one hundred thousand dollars, in addition to several gifts of less amount.

Two of the nephews of Johns Hopkins, William and Lewis N., were respectively the secretaries of the two boards. They did not undertake many arduous duties in the management, but their interest was unflagging. The suggestions of Lewis, the younger one of these two cousins, were sometimes of great sagacity. For example—if I am not mistaken—it was he who first thought that it might be possible to induce the city to purchase the estate at Clifton. Like Francis White, he was a graduate of Haverford College.

Dr. John Fonerden was another of the original board. He was a physician, highly respected, who died before the organisation of the University.

His place was filled by the choice of Dr. James Carey Thomas, who became one of the most active, suggestive, and devoted members of the board. His mind was so constituted that he could maintain a living interest in a great variety of subjects. Partly by his profession as a medical practitioner, and partly by his duties as a minister of the Society of Friends, he was brought into contact with "all sorts and conditions of men." He knew the community well, and gathered up, to the great advantage of the University, the opinions and comments which were afloat. While his services were manifold, especially in the promotion of literature, he was of the greatest value by reason of his acquaintance with medical men and the requirements of modern medical education. He was an important factor

in the maintenance of close relations between the Hospital and the University, and in the advocacy of high standards of instruction. He also took a deep interest in the promotion of the religious welfare of the students. As president of the Young Men's Christian Association in Baltimore, he brought over to the University many of its methods; and in social gatherings, sometimes at his house and sometimes in the University rooms, he exerted an influence for good which has never been surpassed, if it has been equalled, by that of anyone else. He might truly be called "an all-round man." He was never wearied, never dull, never negligent, always responsive, always cordial, and always considerate, even toward those from whom he differed.

Another member of the Society of Friends selected by Johns Hopkins was Thomas M. Smith. At the time when the University was organised his health was impaired, and before long he was removed by death, so that his influence upon the institution was slight.

It remains to speak of Mr. John W. Garrett, who was for many years foremost among the citizens of Baltimore, partly because of his commanding personality and uncommon ability, and partly because of the official position which he held as president of the Baltimore and Ohio Railroad, then a dominant factor in the business of the community. Mr. Garrett had been a student in Lafayette College. He had seen much of men in public life, and had been an active participant in the railroad activities of the Civil War. His country seat, at Montebello, was adjacent to that of Johns Hopkins. They were close friends, and must have had many confidential talks with respect to the proposed foundations. In the early days of the University Mr. Garrett was most co-operative. He opened his house to the professors and lecturers, as they came on from time to time, and in other ways showed his strong desire for the success of the institution. Unfortunately he differed in opin-

ion from most of the trustees regarding the policy which should be pursued in the construction of buildings in the heart of Baltimore. This alienated him from active service, and before the controversy was closed his health became seriously impaired, and his death soon followed.

The persons now mentioned (excepting Dr. Thomas and Mr. Stewart) were members of the original board. Among those who followed them and are no longer living, mention should be made of Mr. J. Hall Pleasants, who was chairman of the building committee when several of the most important structures were built; Dr. Alan P. Smith, a well-known surgeon, descendant of a long line of eminent physicians whose names are identified with the history of American medicine; and Mr. William T. Dixon, an excellent successor to Mr. King in the presidency of the Hospital board. Among those who are living I will only mention Mr. James L. McLane, fourth President of the Board of Trustees.

The original board included two judges of the Supreme Court in Baltimore, two other members who belonged to the legal profession, one physician (who was also a minister of the Society of Friends); and seven who were in business. During the Civil War the majority had been, like the founder, Union men; but the temper of all was conciliatory, peace-loving, and disposed to heal the divisions which had rent society in twain. Seven were Friends, four were attendants at Episcopal churches, and one was an Independent Presbyterian. I never knew ecclesiastical preferences to govern the action of a single member of the board. Nearly all of them had received a college education, or its equivalent.

When the last will and testament of the founder was proved, the work of the trustees began, and they took it up with the zest of discoverers. They had a full treasury, a free field, a lofty purpose. They began by collecting

books on university education, including histories of institutions. They opened correspondence with good authorities. Several of them visited Harvard, Yale, Cornell, Ann Arbor, and Charlottesville, two of the oldest, three of the youngest of American institutions. They invited three men of great experience to visit Baltimore, and they questioned them, minutely, in the presence of a shorthand writer, in respect to all the problems which then exercised their minds. Finally they selected a president, whose name (without his knowledge) had been independently suggested to them by several of their counsellors. They acceded to his request for a personal interview before they committed themselves, and he came on from California to see them. He has a distinct remembrance of that important meeting. It occurred in the front room of the second story of a building (destroyed in the great fire) on North Charles Street, above a store in which Bibles were sold, hence called "The Bible House." The meeting took place late in the afternoon of December 29, 1874. All the trustees except Mr. Gwinn, who was ill, were present. They were a very sedate, perhaps they might be called a very solemn, body. After the candidate had been personally introduced to every one of them, he was requested to give his impressions of the situation, which had been explained to him on the previous evening by Mr. Johnson, Mr. Cheston, Mr. King, Dr. Thomas, and, possibly, one or two others. In these remarks he said that, if the purpose of the trustees was simply to establish another college, or to aim only at local benefits, the problem would not interest him; but if they would seize the opportunity to establish a university which should extend its influence far and wide, throughout the land, it would be a privilege, as well as an honour, to be associated in the work; without regard to their political, sectional, or ecclesiastical belongings, the best professors should be brought together, and the most advanced stu-

dents should be invited to follow their instructions. The trustees heartily responded to these views; and in a meeting the next day, when the candidate was not present, they chose him to be their leader. Having been released from the service of the University of California, the president-elect came to the East early in the following spring.



FUNDAMENTAL PRINCIPLES



III

FUNDAMENTAL PRINCIPLES

THE public were naturally impatient to know what sort of an institution was to be established in Baltimore, and accordingly on the 1st of January, 1876, the following announcement was made of fundamental principles by which it was proposed that the new institution should be governed. It is of interest to enquire how closely these positions have been maintained, but the answer I leave for others.

It is the desire of the authorities, I said at that time (speaking in the name of the Trustees), that the institution now taking shape should forever be free from the influences of ecclesiasticism or partisanship, as those terms are used in narrow and controversial senses; that all departments of learning,—mathematical, scientific, literary, historical, philosophical,—should be promoted, as far as the funds at command will permit, the new departments of research receiving full attention, while the traditional are not slighted; that the instructions should be as thorough, as advanced and as special as the intellectual condition of the country will permit; that the glory of the University should rest upon the character of the teachers and scholars here brought together, and not upon their number, nor upon the buildings constructed for their use; that its sphere of influence should be national, while at the same time all the local institutions of education and science should be quickened by its power; and finally that among the professional departments, special attention should be first given to the sciences bearing upon medicine, surgery, and hygiene, for which some provision

has been made by the munificent gift of our founder to establish The Johns Hopkins Hospital.

The selection of professors and teachers upon whom will devolve the instruction of youth, the chief work of the University, is peculiarly difficult because there are here no traditions for guidance, no usages in respect to the distribution of subjects, and none in respect to the kind of instruction to be given; and also because the plans of the Trustees must depend very much upon the character of the teachers whom they bring together.

A very large number of candidates have been suggested to the Trustees; but among them all there are but a few who have attained distinction as investigators or as teachers. Most of those whose names have been thus presented are young men, usually of much promise, who have not yet had an opportunity to show their intellectual power in any department of higher instruction; and yet among this very class a discerning choice will doubtless discover those who are soon to be the men of scientific and literary renown. The Trustees promise to open freely the doors of promotion to those young men who seem to be capable of the highest work, —appointing them at first for restricted and definite periods. Moreover they hope for a while to gain much of the influence and co-operation of older and more distinguished men by inviting one and another to come here from time to time with courses of lectures. But the idea is not lost sight of that the power of the University will depend upon the character of its resident staff of permanent professors. It is their researches in the library and the laboratory; their utterances in the classroom and in private; their example as students and investigators, and as champions of the truth; their publications, through the journals and the scientific treatises, which will make the University of Baltimore an attraction to the best students, and serviceable to the intellectual growth of the land.

In selecting a staff of teachers, the Trustees have determined to consider especially the devotion of the candidate to some particular line of study and the certainty of his eminence in that specialty; the power to pursue independent and original investigation, and to inspire the young with enthusiasm for study and research; the willingness to cooperate in building up a new institution; and the freedom from tendencies toward ecclesiastical or sectional controversies. The Trustees will not be governed by denominational or geographical considerations in the appointment of any teacher; but will endeavour to select the best person whose services they can secure in the position to be filled, irrespective of the place where he was born, or the college in which he was trained, or the religious body with which he has been enrolled.





THE ORIGINAL FACULTY





THE ORIGINAL FACULTY



IV

THE ORIGINAL FACULTY

In the future an antiquary with such powers as those of James Ford Rhodes may delve among the catalogues, reports and addresses which have appeared during the last thirty years, and may discuss the progress of higher education during that eventful period, as Mr. Rhodes has treated of political affairs since the Compromise of 1850. Such a writer has not yet appeared in the domain of education, although a vast amount of material has been collected for him by Dr. Harris and his predecessors in the Government Bureau at Washington. If the antiquary is thorough he will discover, and if he is just he will acknowledge the influence of the Johns Hopkins University upon the development of American Universities. I have been too close an observer, too confidential a participant in its affairs to undertake the historian's task. I stand too near to the partners, and am bound to them by ties of personal friendship and of official intimacy; I have been too familiar with their aspirations and endeavours, their disappointments and successes, to estimate their worth, and if I made the attempt, I should probably dwell on minor incidents and entertaining anecdotes which made a strong impression at the time, but are of no lasting significance. I will, nevertheless, add some further reminiscences of a veteran observer.

Those of us who initiated, in 1876, the methods of instruction and government in the new foundation at Baltimore were young men. Sylvester alone had more than three score years to his credit. Gildersleeve and I, now patriarchs, were forty-five years old. Morris was a little older. Remsen,

Rowland, and Martin were not thirty years of age. The original Associates, many of whom became leaders in their several departments of study, Adams, Brooks, Cross, Elliott, Hastings, Morse, Scott, were still younger. All were full of youthful enthusiasm and energy. There were none to say, "This is not our way"; none to fasten on our ankles the fetters of academic usage. Duty, youth, hope, ambition, and the love of work were on our side. Laboratories were to be constructed, instruments and books to be bought, colleagues and assistants to be chosen, regulations to be formulated, conditions of admission, promotion and graduation to be determined, plans of study to be matured.

As I have intimated, we brought to the council room many prejudices and preferences derived from our previous training and from our personal idiosyncracies. Two of the staff had been professors in the University of Virginia, two had been Fellows in the great English universities, two had received degrees in German universities and others had studied abroad, two had been connected with New England colleges, two had been teachers in scientific schools, and one had been at the head of a State university. Our discussions were free and familiar, as of friends around a council board. It was rarely, if ever, necessary to "make a motion" or to put a question to the vote. By processes well known to Friends, "the sense of the meeting" was taken and recorded.

It was our dominant purpose to hold on to the principles and adhere to the methods which experience had established in this and in other countries, and at the same time to keep free from the slavery of traditions and conditions which are often more embarrassing and retarding than positive laws. We often reminded one another that the rule of to-day was liable to become the custom of to-morrow, the immemorial usage of next month, the iron-clad law of the future, and we tried to preserve spontaneity of action, not only for ourselves, but for our successors. "Evolution" was then beginning

to be the note of the times, and our best advisers urged upon us "Development." "Be slow," they said, "plant good seeds and see what they yield." So we did not undertake to establish a German university, nor an English university, but an American university, based upon and applied to the existing institutions of this country. Not only did we have no model to be followed; we did not even draw up a scheme or programme for the government of ourselves, our associates and successors. For a long time our proceedings were "tentative," and this term was used so often that it became a by-word for merriment. Such considerations carried with them this corollary. Every head of a department was allowed the utmost freedom in its development, subject only to such control as was necessary for harmonious co-operation. He could select his own assistants, choose his own books and apparatus, devise his own plans of study,—always provided that he worked in concord with his fellows. To secure this concord and the support of the Trustees, it was necessary that close relations should be kept up with the President, and that wishes and wants, purposes and plans, should be freely talked over with him. As the University grew, it was not so easy to maintain this usage, but it was maintained, and is still a most serviceable feature in the administration.

The Trustees wisely refrained from interference with the faculty, to whom the government and instruction of the students was entrusted. The Trustees made the appointments, it is true, but they were always guided by the counsel of the President and professors. They awarded the degrees, the scholarships and the fellowships, but only on the nomination and recommendation of the academic staff. The professors, on the other hand, had no part in the financial management. They were not consulted in respect to investments: they did not fix the salaries nor the appropriations for the library and apparatus. In the construction of build-

ings their wishes were paramount, their advice indispensable; but the building contracts were in the hands, exclusively, of the trustees.

An enormous number of applications for professorships were received, and filed; but I do not think they had much weight with the Trustees, who, according to their promises, kept themselves aloof from all dangerous entanglements, and were determined to make their selections with sole regard to the welfare of the University. They preferred to consult, confidentially, those on whose judgment they relied, rather than to be governed by the written endorsements and recommendations which came by every mail, often supported by strong personal influence. Of this I have previously spoken. As I speak elsewhere at length of Sylvester and Rowland, I will here quote what is said of them in Professor Simon Newcomb's "Reminiscences."

> One of the most remarkable mathematicians of the age, Professor J. J. Sylvester, had recently severed his connection with the Royal Military Academy at Woolwich, and it had been decided to invite him to the chair of mathematics at the new University. It was considered desirable to have men of similar world-wide eminence in charge of the other departments in science. But this was found to be impracticable, and the policy adopted was to find young men whose reputation was yet to be made, and who would be the leading men of the future, instead of belonging to the past.
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> All my experience would lead me to say that the selection of the coming man in science is almost as difficult as the selection of the youth who are to become senators of the United States. The success of the university in finding the young men it wanted has been one of the most remarkable features of the Johns Hopkins University. Of this the lamented Rowland affords the most striking, but by no means the only instance. Few could have anticipated that the modest and scarcely known youth selected for the chair of physics would not only become the leading man of his profession in our country, but one of the chief promoters of scientific research among us. Mathematical study and research of the highest order now commenced, not only at Baltimore, but at Harvard, Columbia, and other centres of learning, until, to-day, we are scarcely behind any nation in our contributions to the subject.

It sometimes seemed as if Sylvester was the youngest of the academic council, so exuberant was he in suggestion, so unexpected and emphatic in his counsels, so proud of his pupils, so irascible and so conciliatory. Every step forward that he took in his chosen department of mathematics delighted him, as an explorer is delighted with the discovery of a mountain peak or a hidden source. Every promising follower seemed to him a genius.

Ample recognition of his eminence as a mathematician has been given in the public notices of his life, especially in the biographical address delivered in Baltimore by his younger colleague and associate, Professor Fabian Franklin, and in a compact notice that is printed in the "National Dictionary of Biography." It was always a wonder to me that a person of such acknowledged pre-eminence received no academic distinction during his long residence in this country; and I have never been quite satisfied as to the reasons why this was so. He proved to be a most stimulating associate and teacher. His enthusiasm was unfailing, and when he was called, seven years later, to the University of Oxford, as Savilian Professor, he declared that his residence in Baltimore had been the most quickening and prolific period of his intellectual life.

As already stated, it was about this time that the modern methods of studying animal and vegetable life were coming into vogue. The name of "biology" had been introduced into English parlance by Professor Huxley, and it had almost eliminated the old term "natural history." Looking forward to the establishment of a School of Medicine, it was clear that a preparatory study of the biological sciences should be encouraged by methods superior to any which were then employed in this country, and of far greater comprehensiveness. There was in Cambridge University a promising student of physiology, the pupil of Michael Foster and the assistant of Professor Huxley, Henry Newell Martin, a

graduate of London University and of the University of Cambridge. He was well acquainted with all the newer methods of physiological research. He had won many honours and was regarded as one of the coming men in his chosen field. He came to Baltimore and established the first American biological laboratory. A score of successors followed. The advances of science since that date have called for so much subdivision that the term "biology" is falling into disuse; but, as it was employed at that time, and is still employed to a considerable extent, it meant the study of the structure and functions of living plants and animals. It is now hard to believe what prejudices then prevailed in respect to "biology." The science was dreaded as if it were to overthrow, or at least to undermine, religious belief. To this study Dr. Martin gave a noteworthy impulse, and the methods which he introduced were soon followed in other parts of the country. In the Johns Hopkins University it was soon determined that no one should be encouraged to enter upon the study of medicine without a careful previous training in a physiological laboratory. The improvements now common in medical schools are largely based upon the recognition of the principle that living creatures, in their normal and healthy aspects, should be studied before the phenomena and treatment of disease, and credit should always be given to Dr. Martin for the skill with which he introduced among Americans the best methods of study.

Another Englishman was added to the faculty. Professor Charles D'Urban Morris, a graduate of the University of Oxford and a fellow of Oriel College. He had acquired a high reputation as an enthusiastic teacher of boys, and in order that a love of the classics might be introduced among undergraduates, he was invited to become the Collegiate Professor of Latin and Greek. He was a man of fine presence and of noble character, but, for some reason or other, the times seemed to be against him, and the number of stu-

dents who elected his courses was never very large. He brought to Baltimore, however, the best traditions of an English university, and among other valuable suggestions which he made was the appointment of advisers to small groups of students, so that every one of them might be guided in the choice of his studies by a qualified friend. The office of tutor in the American colleges had then fallen into disrepute, because large classes of students were assigned to the guidance of inexperienced teachers, whose relations were often quite perfunctory, and whose strength was often absorbed by professional studies carried on simultaneously with the duties of the tutorial office. The word "adviser" was therefore used in place of "tutor," but many of the functions which pertain to the English tutorial system were transferred to these "advisers." The need of such officers is now generally recognised, and I cannot but regard the introduction of the "preceptor system," announced at Princeton, as, in some degree at least, due to the conditions which were known to President Woodrow Wilson during his residence in Baltimore.

I cannot speak freely of the immense influence that was exercised in the development of the plans of the Johns Hopkins University by Professor Gildersleeve and Professor Remsen, because they are both living and both serving the university with increasing ability and increasing influence. For more than twenty-five years they were the chief counsellors of the President, and the authorities upon whose wisdom and knowledge the Trustees relied for advice. At the time of his appointment, Professor Gildersleeve had acquired great distinction in the University of Virginia. Notwithstanding the extremities of war, he had never lost the habits of the scholar who had been well trained in Göttingen. His removal to Baltimore gave him an opportunity to prosecute his studies under favourable conditions. He had free access to books and journals. He came into easy relations with

other scholars. He was soon surrounded by an enthusiastic company of Grecians, whom he taught by what was known as the Seminary method. He instituted a Journal of Philology, which became the repository of his own contributions, as well as of the papers prepared for its pages by other competent writers. He edited Pindar with so much ability as to attract the unqualified praises of some of the foremost scholars in England and on the Continent. His love of literature and his acquaintance with the best writers, ancient and modern, gave him great weight in all our discussions in respect to letters and language, and he was looked up to as an authority, whose learning could be relied upon and whose criticisms were sure to be governed by the very best standards. He held in this respect the foremost position, and there was no second.

The services which the University received from Professor Gildersleeve in the promotion of literature had their parallel in the services of Professor Remsen, who afterward succeeded to the office of President. Like Professor Gildersleeve, after completing his introductory studies in this country, he had become familiar with the methods of German science, by long residence in Göttingen and Tübingen. While a professor in Williams College, of chemistry and physics, he had begun to publish papers upon chemistry which evinced so much ability that his appointment was strongly recommended to the Trustees by authorities that could not be disputed. His distinction as a chemist has been constantly growing from that time to this, and has been recognised by many honourable appointments. His influence in the University was not restricted to the conduct of his laboratory and the promotion of his favourite science. He was a man who took broad views of education, and he was a good counsellor, especially in all that pertained to the scientific departments of study. He was also a worthy citizen, ready at any time to lend a hand for the promotion of civic welfare.

The two persons last mentioned are still living and active. May this long be the case! The first four have all died. These six professors with the President constituted the original Academic Council. Younger men have taken the places of those who are gone; but the original seven must be considered as the initiators of the work of instruction.

I must not fail to mention that the incipient University had several excellent counsellors whose names do not appear upon the academic staff. President Eliot was one of those who frequently visited Baltimore, was always ready to reply to an inquiry or to give counsel when requested, and, by his character, experience and disposition, was one of the most serviceable of the outside friends of the University.

Professor Wolcott Gibbs, in the earliest days, was invited to become a professor in the University, and listened favourably to our proposals; but he finally declined them on account of his desire to be quite free from academic duties. "Take Remsen and Rowland," was his advice. From him came the suggestion that Sir William Thomson, now Lord Kelvin, might be invited to Baltimore.

We had many other excellent friends in Cambridge, Professors B. Peirce, Lowell, Child, Lane, Goodwin, Pickering, and Trowbridge among the number; and in New Haven I gratefully recall the kind offices of Professors Brush and Whitney, and of Dr. Francis Bacon.

Nor can I fail to remember the constant co-operation of Professor Simon Newcomb, who did not join our staff until after the departure of Professor Sylvester, but who was an occasional lecturer and a friend and adviser, from the earliest days.

While I am thinking of those who encouraged us at that time, I am especially mindful of Mr. S. Teackle Wallis, a leader at the Baltimore bar, a lover of letters, and a public speaker of great distinction, who was unfailing in his support of the institution in which his friends, Judge Dobbin

and Judge Brown, were prominent managers. On a public occasion he delivered a most noteworthy address. Mr. William T. Walters was always ready to open his famous galleries to the professors and students, and to extend to them courtesies which were very gratifying. Almost from the earliest days, Mr. William W. Spence was our valued friend. He opened his house and his purse with great generosity, and his sympathetic presence on public occasions was a constant encouragement. In later days, Mr. William Keyser was one of the very best supporters of the University. The house of his uncle, Mr. Samuel G. Wyman, was the abode of generous hospitality. Hon. Ferdinand C. Latrobe, repeatedly mayor of the city, and his father, the Honourable John H. B. Latrobe, never lost an opportunity to co-operate with us. Through the agency of the son, while mayor, our first great gift of one hundred thousand dollars was received from Mrs. Donovan.



SOME NOTEWORTHY TEACHERS NO LONGER LIVING



V

SOME NOTEWORTHY TEACHERS, NO LONGER LIVING

It cannot be too frequently brought to mind that the merit of a university, in the long run, depends upon the men who are called upon to conduct it—upon them absolutely, if not exclusively, for although the teachers must have such auxiliaries as books and instruments, books are nothing but paper and ink until they are read, and instruments but brass and glass until craft and skill are applied to the handling. So, after a university has been launched, eternal vigilance is requisite in order that the highest standards may be kept up when new appointments are made, and that every member of the faculty may receive encouragement and help in the prosecution of his studies. I do not think that what is called "pull" has had much to do with appointments in American institutions, although I have known a few instances where "Pull" and "Push," twin reprobates, interlopers from other fields, have been invoked in behalf of university candidates. As a rule, aspirants are too well aware that their disqualifications will be uncovered if "Push" and "Pull" are cross-questioned, and that the truest evidence of ability is not found in the testimonials of friendship, but in records of the past—personal, domestic, and scholastic antecedents—discipline, examinations, writings, investigations, prizes, honours. Work performed is the surety of work that will be performed in future. Even without the interference of "Push" and "Pull," it is hard to discover the best men, and hard to capture them when they are discovered. There is a still greater difficulty in educing from every professor

the best of which he is capable. The country is full of cases so similar that they might be presented in the form of a mathematical formula. The young man of talent, especially when under the inspiration of a strong mind, rises rapidly, buoyed up by hope and elated by praise. He gets his title; he wins his wife; he opens his house; hospitality is expected of him; children come; books must be bought; journeys must be made; bills must be paid; in fine, the pot must be kept boiling. The salary which seemed so liberal for Bachelor proves inadequate for Benedick. Beatrice makes a difference. Many have to resort to expedients in order to get the necessaries. Few are they who resist the levelling tendency of this period; who rise above the table-land upon which they are travelling, and reach the mountain-peaks.

It is a great advantage to any university if the older members of the faculty are those who drink of the fountain of perennial youth—like Peirce and Gray in Cambridge, Silliman and Dana in New Haven, the Le Contes in California, and the like—men whose enthusiasm never died out, whose mental and physical vigour remained unabated, and who found their highest pleasure in doing, and not in dozing. The original men at Baltimore were of this type. Others like them have followed. Indeed, we have been fortunate, from the beginning, in having, as permanent members of the faculty, men of inspiring qualities, men who "could light their own fires" and show others how to do the same—men who never were tired of work.

We have been fortunate, too, in our guests. It is of great advantage to bring into an academical circle men from other universities—observing, critical, suggestive, familiar with different ways, looking, perhaps, for colleagues or for assistants, asking help, answering questions, showing methods. Whatever may be the conditions in other countries, I have no doubt that in this period of American development there are great advantages in calling men of renown, from a

distance, into the intimacy of our secluded, if not cloistered, lives. To meet other travellers is almost as good as to travel ourselves. It may be even better.

To illustrate these principles, I shall speak of some noteworthy scholars with whom we have been in familiar relations; but I shall rarely allude to any who are living.

The winter of 1876-77 was memorable in Baltimore. It was an era of good-feeling—of great expectations. The differences of the Civil War were not forgotten, but they received no emphasis. The new foundation was welcomed as an agency of conciliation. One evening, for example, there was a social "reunion" of good citizens brought together to show their interest in and their respect for the faculty of this incipient University. Men of all shades of opinion were assembled—Union soldiers, Confederate soldiers, judges, ministers, doctors, lawyers, merchants, bankers—the prominent citizens—all of them ready to welcome an institution devoted to science and letters. "We have had no such gathering," it was said, "since 1861. Men are here who have not met on common ground since the election of Lincoln." This was an auspicious beginning, never to be forgotten. The world was expectant, everybody was inquisitive, not a few were sceptical—some may have been distrustful, none were hostile.

In order to illustrate the activities of other universities, and to secure the counsel of eminent scholars in respect to our development, the decision had been reached already that academic lectures on various important and attractive themes should be opened to the public, and that the professors should come from institutions of acknowledged merit established in the North, South, and West. The usages of the *Collége de France* were in mind. Thus the instructions of a small faculty were to be supplemented by courses which should be profitable to the enrolled students, and entertaining, if not serviceable, to the educated public. Gildersleeve and

Mallet, the Grecian and the chemist, were representatives of the inimitable methods of the University of Virginia. Judge Cooley, the constitutional lawyer, the distinguished jurist, came from the great State University of Michigan; and Allen, the classical-historian, from a kindred institution in Wisconsin. Harvard loaned to us its two leading men of letters, Child and Lowell. Whitney, then at the height of his renown, came from Yale, and likewise Francis A. Walker. Hilgard and Billings represented the scientific activities of Washington—the former chosen because of his experience in geodesy, and because of our desire, at that early day, to initiate surveys in the State of Maryland; and the latter, because of his acknowledged distinction in medicine, which was soon to be a leading department of study among us. Simon Newcomb, the illustrious astronomer, was another man of science in the service of the government.

Each course included twenty lectures. They were given in a hall that held about 150 persons, and the hour was usually five o'clock. Ladies and gentlemen attended, without enrolment or fees, as well as the students and professors of the University. The lecturers were accessible to all who wished to confer with them, and many among us then formed friendships which lasted until the ties were severed by death. Sometimes bright students were spotted by these visiting professors, and afterward invited to positions of usefulness and distinction elsewhere—three at least to Harvard.

Ever since that opening session, public lectures have been given on the plans originally projected, somewhat changed as to the arrangements from time to time. There are differences of opinion as to the value of such public courses, but I firmly believe in them, not because they promote exact scholarship or incite the hearers to investigation and study, but because the presence of an invigorating teacher, presenting the best results of his thought, is inspiring to the

younger, stimulating to the older, lovers of knowledge. This theme requires more than a passing paragraph, but I refrain from writing more.

I have made no count of the lecturers and speakers who have spoken in Baltimore, but in the course of five-and-twenty years there must have been 300—some, indeed, giving but single addresses, like Huxley, Moissan, and Klein; others, like Cayley and Kelvin, remaining a good while. Thus it has come to pass that I have met upon familiar terms a great many of the scholars of this generation, and have learned to estimate their services and admire their genius. They and their peers, at home and abroad, are the men by whose learning, investigation, and publications, society is carried forward. The world applauds the heroes of great struggles, and it does so rightly; it showers its plaudits upon the orator; it witnesses, breathless, the achievements of surgeons; it calls our time the age of electricity; and yet it is prone to forget or overlook the hidden workers of the laboratory and the library, the quiet men who are the necessary precursors of those who are devoted to the application of knowledge. It underpays them while they are in service; it rarely thinks of providing pensions for their advancing years, or of giving stipends to their families when premature death interrupts activities; the honours it bestows are the empty privileges of placing after their names a few letters of the alphabet in order to show their academic rank. The world knows little, until they are ended, of the anxieties that harass the scholar when he thinks of his future life—I mean his future life here below; it cares nothing for his family. But these quiet men of the desk and the den, of the pen and the book, of the balance and the lens, are they who have kept alive the traditions of literature and have extended the bounds of science.

An English mathematician, lately a fellow in one of the colleges of the University of Cambridge, called on me one

day and opened the conversation with this pleasant remark: "I have heard a great deal that is good about Baltimore." "Indeed," I replied, "and pray, what have you heard?" "That Baltimore is a seaport which exports corn and imports mathematics." This drollery was founded upon fact. The newspapers and the railroad men of the day were loud in their mention of "our terminal facilities" for shipping Western grain to foreign countries; and the new university had acquired some note by the engagement of the two most famous mathematicians of England—Sylvester and Cayley.

Professor Cayley, of the University of Cambridge, spent a winter in Baltimore and endeared himself to all who met him, by his gentleness and consideration, while they felt honoured by an introduction to one whose renown they could appreciate, though they could not follow the light he was carrying into the mazes of modern algebra, and had never heard of the Abelian functions. I suppose we should never have secured his lectures except for that export of grain from America, in which Baltimore had its share. It was this way. The income of the Sadlerian professorship, which he held in the University of Cambridge, was cut down by the diminution of the rents that maintained it, and the rents were reduced by the fall in the price of "corn," due to the importation of our wheat by Great Britain.

To us who were non-mathematical, Cayley was the very opposite of Sylvester. He was calm, undemonstrative, orderly. His lectures were upon a definite plan, and his manuscript was distinct and legible, so that it might have been sent at once to the printer. He was the embodiment of modesty, and yet no one who saw his fine head could doubt that he had force. Those who could follow him were profoundly impressed by his ability. He did not have many hearers, and most of them were mathematical

teachers—"a regiment of brigadiers," Sylvester called them.

Here is Newcomb's appreciation of Cayley.

"The career of Professor Cayley afforded an example of the spirit that impels a scientific worker of the highest class, and of the extent to which an enlightened community may honour him for what he is doing. One of the creators of modern mathematics, he never had any ambition beyond the prosecution of his favourite science. . . . His life was that of a man moved to investigation by an uncontrollable impulse—the only sort of man whose work is destined to be imperishable. Until forty years of age he was by profession a conveyancer. His ability was such that he might have gained a fortune by practising the highest branch of English law, if his energies had not been diverted in another direction. The spirit in which he pursued his work may be judged from an anecdote related by his friend and co-worker, Sylvester, who, in speaking of Cayley's even and placid temper, told me that he had never seen him ruffled but once. Entering his office one morning, intent on some new mathematical thought which he was discussing with Sylvester, he opened the letter-box in his door and found a bundle of papers relating to a law case which he was asked to take up. The interruption was too much. He flung the papers on the table with remarks more forcible than complimentary concerning the person who had distracted his attention at such an inopportune moment. In 1863 he was made a professor at Cambridge, where, no longer troubled with the intricacies of land tenure, he published one investigation after another with ceaseless activity, to the end of his life."

Professor Sylvester spent seven years with us, the seven which preceded his seventieth birthday. He left Baltimore to enter upon the Savilian professorship in the University of Oxford, and he died the incumbent of that post in 1897.

The service in Johns Hopkins was not his first experience as a professor in this country, for when quite a young man he had been one of the brilliant staff of the University of Virginia, and stories may still be heard at Charlottesville respecting the manifestations of his irascible disposition while he was there resident. It was at the earnest request of Benjamin Peirce and Joseph Henry, men of science both eminent and wise, that I called upon Sylvester in London, introduced by Sir Joseph Hooker, the botanist, then president of the Royal Society of London. It was obvious that the mathematician was willing, perhaps eager, to be called to Baltimore. He was harassed by what seemed to him a grievous wrong, his displacement by the government from the post which he had held at the military college in Woolwich; his pecuniary resources were limited; and he longed not only for a salary, but for the recognition of a university appointment, which for no fault of his own had been denied him in England. Because he was a Jew, he had not even been able to take a baccalaureate degree, although he was eminent even thus early as a mathematician. I was not so ready to invite him as he was to receive an invitation, for there were many intimations that he was "hard to get on with." More than one American correspondent reminded me of the importance of co-operation among the members of a faculty, with dark hints of possible effervescence. Before asking him to this country I made many inquiries among his English friends respecting his temper, and I received very guarded answers, which awakened the alarm they were designed to allay. Nevertheless, the evidence of Sylvester's intellectual brilliancy and of his renown were so great that the possibility of discord seemed infinitesimal in comparison with his merits; so he was called and so he came.

Many good stories are afloat about the eccentricities of this professor—most of them exaggerated or twisted—but

those which I shall tell came under my own observation. An apocryphal anecdote about his alarm because one leg had become shorter than the other, as he walked to the lecture-room one foot in the gutter, is a story that I had heard in Berlin, decades before, attributed to Neander. College traditions are full of such academic Joe Millerisms. Sylvester had a good deal of skill in versification, and had published a small volume, full of racy remarks and witty notes, on the "Laws of Verse," in the course of which he argued that imagination has much to do with the science of mathematics. In the appendix are some very good versions of classical and modern German poems. If his poetical fire had gone no farther, all would have been well; but he became possessed by a sort of monomania for rhyme, and soon after he came among us his friends were confidentially treated to a long series of lines, every one of which ended with a syllable pronounced both *īnd* and *ĭnd*. Rosalind was the theme. Some of the rhymes were forced to a ridiculous degree—Bowdoined, I remember; Bodind, he called it, the derivative of Bowdoin. This extraordinary composition, a veritable *tour de force,* reached four or five hundred verses, each closing with the three monotonous letters or their vocal equivalents. I do not know whether he ever gave away printed copies of this extraordinary production of his fertile brain, but he read his verses to many unwilling hearers, and I know that he kept the type standing for months at the printer's for additions and emendations. An early manuscript copy is in the archives of the University, and I will give a few lines from it—I am afraid to give more:

To Rosalind

(Key to the sentence of some hundreds of lines, all rhyming with ind)

In Cecilia's name I find—
(Deem not thou the guess unkind)—
Celia, with a sigh combined,[1]
Whose five letters, loose aligned,
Magic set, and recombined,
Fairest O! of lily kind,
Shall disclose to every mind,
From Far West to Orient Ind
With each mortal thing unkinned,
Thy sweet name, dear Rosalind!

He certainly distributed a few printed copies of "Spring's Début: a Town Idyll," more than 200 lines of nonsense verse, rhyming with *in* more remarkable for the appended notes than for any merit as a poem.

Sylvester enjoyed stimulants—I do not mean such vulgar and material articles as alcohol and coffee. I never saw any indications that he cared for their support. But he loved such stimulants to intellectual activity as music, and light, and lively society in which he was not called upon to participate. Once at a symphony concert I sat just behind him, admiring the dome of his capacious cranium, unconcealed by hair, and I noticed how absorbed he was. The next day, Sunday, he came to me impetuously to say that he had worked out some mathematical proposition at the concert of the evening before, the music having quickened his mathematical mind. He really thought this was his greatest achievement yet, and he had hastened to write it out and mail it to the Academy of Sciences in Paris. Once he told me that having a special paper to prepare, he went to a store and bought a pound of candles, which he placed about his room, on all sorts of extemporaneous candlesticks, "for light," he said, "is a most powerful tonic." He com-

[1] Celia + ci = Cecilia.

plained that the members of his club thought him dull, and the passers on the street thought him queer, when the truth was, as he told me, that the activity of others around him kept his brain active, and enabled him to carry on his own intellectual abstractions. Sometimes, however, he was very absent-minded. For example, he arrived from Philadelphia on a late train and walked bareheaded to his hotel. The next morning he demanded his hat, and insisted that it was in the house, and then he could not be persuaded that it was not stolen, until a telegram revealed the fact that the hat had travelled in the Pullman car to Washington.

Once, in print, he speaks of one of his effusions as "evolved out of an improvised epigram which, as he wended his way home that morning, formed itself in the author's mind, intoxicated with the bright sun shining overhead, the balmy air, the song of the birds, and the new-come-out virgin spring just beginning to peep over Old Father Winter's reverend shoulder."

Sylvester was a genius, with all the admirable qualities, and with many of the limitations and eccentricities of genius. He was often elated by the honours that were showered upon him by the men of science, and complimented by the deference and courtesy that came to him in society; but his mercury sometimes sank below zero. He could be irate, very much so, but his wrath was like "the crackling of thorns beneath a pot." For a moment it was furious, then the flame became extinct and the embers died.

By recalling his oddities, I must not blind the reader to the extraordinary strength and fertility of Sylvester's mind. From every point of view he was a marvel—first and foremost as a mathematician, as all the world has acknowledged; then as a teacher of gifted scholars, not by any means a drill-master, but an inspirer; then as a man of letters, loving English, French, German, Italian, Latin, and Greek literature, carrying the Odyssey in Greek for his light reading

at sea, and working for years to perfect his version of one of the odes of Horace, *ad Mæcenatem* (iii. 29).

Among the American investigators of light and heat, Rumford the earliest, and Rowland the latest, about a century apart, are the most distinguished. Rumford founded a prize for the recognition of important contributions to those twin branches of physics, and very long afterward Rowland received that prize from the American Academy of Arts and Sciences. So their names are associated, but their studies bring their names into closer relations. Rumford died past sixty years of age; Rowland has just departed at the age of fifty-three, both cut off before their work was done, not before their fame was secure. For a quarter of a century Rowland had free scope in the University at Baltimore, and his freedom was justified by his achievements. He was a great man—great in talents, great in achievements, great in renown. So it was said at his funeral. He was one of those rare scholars who owe but little, if anything, to a mortal teacher. They learn their lessons in the school of nature. Investigation is their watchword, observation and experiment their instruments. The sun is one of their chief instructors; the earth, another; the sea, the air, the ether, give knowledge to such minds. Of these lessons Rowland was never wearied. But he rebelled in his boyhood against the tasks of ordinary schools; he abhorred Latin and Greek; he would not go to college; he would not swear in the words of any master; conscious of his own accuracy in research and in calculation, he asked for no indorsement. When he entered his teens he began to make notes of hard problems in physics, and to begin their solution. While he was an obscure assistant in the Rensselaer Polytechnic Institute at Troy he made some discoveries respecting the electrical discharge, and this paper gave him instantaneous celebrity. It led to his intimacy with Clerk Maxwell, to his call from the Johns Hopkins, to his winter in Helmholtz's laboratory, and to a noteworthy

investigation which was reported by Helmholtz to the Berlin Academy when its author was twenty-seven years old.

As a part of his duties, Rowland was requested by the trustees to buy the requisite instruments for the physical laboratory. Everything was left to his discretion. Those were the days when the scientific lecture-rooms in America gloried in demonstrations of "the wonders" of nature—"the bright light, the loud noise, and the bad smell." Rowland would none of this. Instruments of precision he would have, and would have them in abundance, and of the best makers, no matter about the cost. So his laboratory was well equipped; and when at Harvard, a few years later, Professor Wolcott Gibbs published a catalogue of the instruments of precision in this country available for research, Johns Hopkins led the column.

From that time onward Rowland was conspicuous and his course was brilliant. The university secured temporary lodgement in two private dwelling-houses. "All I want," said Rowland, "is the back kitchen and a solid pier built up from the ground." As usual, he got what he wanted, though it must be said that his requests were not always so restrained. Something—I do not know what—turned his attention to the importance of redetermining the mechanical equivalent of heat, and he was encouraged by the American Academy of Arts and Sciences to undertake this enquiry. He devised his own method, made his own instrument, and worked out the results, which stand, I believe, as the nearest approach to absolute accuracy that has yet been attained by the eminent men who have attacked this fundamental problem.

The subsequent career of Professor Rowland is now a part of the history of science in America, an important chapter in the science of light and heat. There is no reason why I should repeat the list of the honours that he has received, nor enumerate the investigations which he carried forward,

nor the names of physicists in all parts of the country who acknowledged him as their illustrious teacher, for Dr. Mendenhall has made a critical estimate of his contributions to science and many other eulogies have been called out by his death.

Yet perhaps a few more words of personal delineation may help to keep in mind his remarkable individuality. He was tall, slender, but not slim, well proportioned, alert, giving every indication of a healthy body. Of physical exercise he was very fond; in winter the horse, in summer the sail-boat, gave him never-failing delight. He knew where to find the trout and how to handle the rod. He would take great risks in following the hounds. "You should think of the fox, and not of the ditch," I have heard him say when he was chided for his rash horsemanship. He landed once in Liverpool and saw an advertisement of a meet. He took a train to the nearest station, hired the best nag he could find, joined in the run, won the brush, and then disappeared from among his competitors, who hardly knew what to make of this unexpected victor. He designed a sail-boat, and before it was launched he told the builders to paint the water-line where his calculations said that it should be. They objected; he persisted. The boat was launched, and the builders smiled when they saw that the line was above the water's edge. "Put in the mast," said Rowland, and the boat sank to the painted line. "That was what I had figured on," he exultingly said. The incident was closed.

Rowland's enduring fame will rest partly on his determination of the mechanical equivalent of heat, partly on his accurate ascertainment of the value of the ohm, and chiefly on his spectrum analysis. He contrived the dividing-engine, which could rule many thousand lines to the inch, and he made one of the most perfect, if not the most perfect, screw that the world has ever seen, to guide the diamond needle which ruled the concave gratings. By the

agency of these gratings the solar spectrum is analysed. But Rowland did not stop here; he experimented in photography till he became a master of the art, and made a map of the solar spectrum, more explicit and more exact than any previous map. This is not the place, nor am I the person, to give a detailed account of this achievement, and of the wonderful discoveries to which it led in respect to the nature of light.

Instead of making the attempt, I will give a few sentences which I do not remember that I ever showed to Rowland written to me in 1882 by a Harvard friend who went with Rowland to the Electrical Congress in Paris. This friend of ours was Professor John Trowbridge:

"Rowland invited Mascart, Sir W. Thomson, Wiedemann, Rossetti, and Kohlrausch to his room at the Hôtel Continental in Paris, and showed them his photographs and gratings. It is needless to say that they were astonished. Mascart kept muttering *'Superbe'—'Magnifique.'* The Germans spread their palms, looked as if they wished they had ventral fins and tails to express their sentiments. Sir W. Thomson evidently knew very little about the subject, and maintained a wholesome reticence, but looked his admiration, for he knows a good thing when he sees it, and also had the look that he could express himself upon the whole subject in fifteen minutes when he got back to Glasgow.

"In England, Rowland's success was better appreciated, if possible, than in Paris. He read a paper before a very full meeting of the Physical Society—De la Rive, Professor Dewar of Cambridge, Professor Clifton of Oxford, Professor Adams (of Leverrier fame), Professor Carey Foster, Hilger the optician, Professor Guthrie, and other noted men being present. I was delighted to see his success. The English men of science were actually dumbfounded. Rowland spoke extremely well, for he was full of his subject,

and his dry humour was much appreciated by his English audience. When he said that he 'could do as much in an hour as had hitherto been accomplished in three years,' there was a sigh of astonishment and then cries of 'Hear! Hear!' Professor Dewar arose and said: 'We have heard from Professor Rowland that he can do as much in an hour as has been done hitherto in three years. I struggle with a very mixed feeling of elation and depression: elation for the wonderful gain to science; and depression for myself, for I have been at work for three years in mapping the ultra violet.' De la Rive asked how many lines to the inch could be ruled by Rowland. The latter replied: 'I have ruled 43,000 to the inch, and I can rule 1,000,000 to the inch, but what would be the use? No one would ever know that I had really done it.' Laughter greeted this sally. This young American was like the Yosemite, Niagara, Pullman palace car—far ahead of anything in England. Professor Clifton referred in glowing terms to the wonderful instrument that had been put into the hands of physicists, and spoke of the beautiful geometrical demonstrations of Rowland. Professor Dewar said that Johns Hopkins University had done great things for science, and that greater achievements would be expected from it. Captain Abney wrote a letter which Rowland ought to show you, for, after having been read at the meeting, it was given to him.

"The letter concluded with this characteristic anecdote: 'I introduced Rowland to a fox-hunting gentleman, an old acquaintance of mine, and I imagine Rowland got enough of English fox-hunting, for, on my return from Birmingham, one evening, I found him stretched on the bed, a symphony in brown and red mud, his once glossy hat crushed into nothingness, his top-boots, once so new, a mass of Warwickshire mud. He dryly remarked that he "guessed there wouldn't be any trouble about getting his hunting-suit through the custom-house now." He came very near break-

ing his neck, having been thrown on his head before he "could calculate his orbit," as he remarked. I could not help shuddering from friendship and from love of science.'"

One of the most extraordinary and renowned of the physicists of the nineteenth century lectured before the Johns Hopkins University in 1884. Years before, I had sought the counsel of Sir William Thomson, now Lord Kelvin, in Glasgow, where I found him in his laboratory surrounded by a dozen students watching, with the attention of a clinic, an experiment which he was making. It may have been the working of the syphon recorder—that ingenious device by which the feeble currents received from an ocean cable are reduced to curves, which are afterward translated into words—I am not sure, but I have treasured to this day a bit of the script which he then gave me. One day Professor Wolcott Gibbs suggested, to my surprise, that we should invite Lord Kelvin to lecture in Baltimore. We hardly thought it likely that he would accept our invitation, but, supported by one or more indorsements, it was favourably received by this eminent man, and he came.

Long may it be before anyone shall write a memorial sketch of Lord Kelvin, but when it is written there must be a paragraph or a chapter about his visit to Johns Hopkins and his reception by the "coefficients," the company of mathematicians to whom he gave his lectures upon light. The lectures went on from day to day upon the topics that occurred to the lecturer, or that were suggested by the questions of his hearers. Everyone who was capable of following him was enchanted. "How long will these lectures continue?" asked one of the auditors. "I do not know," replied Lord Rayleigh, who was one of the followers. "I suppose they will end some time, but I confess I see no reason why they should."

Our celebrities were not always mathematical. Dean Stanley, for example, belonged to many schools, but not, so

far as I have ever heard, to the school of mathematics. He came to Baltimore from Philadelphia under the escort of that generous and hospitable internationalist, Mr. George W. Childs. As he could only stay over night, I said to him, as he came into the railroad station: "What would you most like to see in Baltimore? We have a superb hospital," I began. "I cannot endure a hospital," was his quick interruption. "Dr. Harper, my young medical companion, might like to see that, but show me something historical." "Historical?" I enquired. "You come from Westminster Abbey to a town a century and a half old. Dear me, what would you call 'historical'? We have a Roman Catholic Cathedral, where a Provincial Council has been held, and it has some paintings given by a King of France. We have the Maryland Historical Society, with archives and pictures that interest local antiquaries. We have a University that has passed its second summer. And there are the Bonaparte portraits and mementoes." "Take me to see the Bonapartes," was his prompt reply. I explained to him that they were a private possession, and I must ask permission. While he was taking his afternoon cup of tea, the permission was readily and graciously given. The dean was delighted with what he saw. Every object, every portrait, interested him and drew forth some appropriate question or comment. I have a vivid remembrance of his kneeling before a group of miniatures which hung so low that even one of his stature could not readily see them standing. At dinner he was full of anecdotes and enquiries. Among other things, he told the famous Inveraw and Ticonderoga story, which was soon afterward printed in *Fraser's Magazine* for October, 1878. At nine o'clock he was ready to meet the assembled officers and students in Hopkins Hall. Of course he was called on for a speech, and he said a few words, which were recalled, the next day, by Sir George Grove, a member of the party and a man of ready pen and editorial habits. The company

was naturally pleased by his historical allusions to Walter of Merton and Devorguilla of Balliol, for, although we did not know much about either of them, we projected our imaginations forward and wondered whether Hopkins of Baltimore would be as long remembered. These were Dean Stanley's words:

"When I see an institution like this in its first beginnings, I am carried back to the time my own university in England was begun, perhaps a thousand years ago, in the fabulous obscurity of the age of Alfred, or the more recent historic times of Walter of Merton or Devorguilla of Balliol; and I observe the repetition of the same yearnings, after a distant future of improvement, as those which were before the minds of those old mediæval founders. The same spirit is needed for that improvement on this side of the ocean and on the other. I am led to think of the description given by Chaucer in that inestimable Prologue to the 'Canterbury Tales,' which I hope you will all read one day or other, of the Good Scholar and the Good Pastor, bred in Oxford in his time; and I see how, in spite of all the vast changes which have passed over the minds of men since that age, the same qualities are still necessary to make a good and sincere scholar, a good scientific student, an efficient medical or legal adviser, an efficient spiritual pastor. Simplicity, sincerity, love of goodness, and love of truth are as powerful and as much needed in our day as they were in the days long ago, which formed the great professions that are still the bulwarks of society."

The remarks of Dean Stanley were appropriate—of course they were; he never said anything inappropriate—but his manner in meeting those who were presented to him was more remarkable. Each name set him thinking. "From what part of England did your forefathers come?" "Are you of the —— family?" "You surely are not of English stock?" "Did your people emigrate to Virginia?"

These and like questions, with the answers they elicited, put everyone at ease as he came up to greet him. His biographers have truly said that everywhere, in his American visit, "he put himself on a level with the commonest person and without a touch of self-consciousness. His tact was unfailing, and it flowed from the desire and the power to throw himself into the feelings and circumstances of others." Many people have this desire—how few like Stanley have the ability as well as the wish!

I notice one slight inaccuracy in their memoir, and that is so amusing that I must mention it. "Whether he spoke to the Congregationalist students of the Johns Hopkins University, or to the Presbyterians, Methodists, Baptists, and Episcopalians elsewhere, his audience felt that in each utterance the speaker was sincere in the effort to discover points of union sympathy." As the new foundation in Baltimore was non-denominational, and the president was the only Congregationalist on the governing boards—this wholesale classification of his colleagues, as Congregationalists, by an ecclesiastical historian, was gratifying, but unwarranted.

Mr. James Russell Lowell, then Professor Lowell, and Professor Child spent the month of February, 1877, with us, and during a part of the same period Professor Charles E. Norton was lecturing at the Peabody Institute. They were revered as three wise men of the East. Lowell made but little preparation for his lectures, which were devoted to Romance poetry, with Dante as the central theme—I mean that he made but little special preparation for each discourse. He had with him the accumulated notes of a long-continued professorship, and I think he told me that he had read Dante forty times over. His manner was so captivating that he would have delighted his auditors if he had simply stated the most commonplace reflections on mediæval poetry; but his literary sagacity, his humour, his learning, and his citations charmed all who heard him, more, perhaps, than greater

elaboration and more logical treatment would have done. In private, he was delightful. I treasure a vivid picture of his getting down on his knees so as to be of the same height as a little girl seven years old, and offering her his arm as he escorted her to the supper-table; and I know a lady who still counts as a valuable memento the offhand verses with which he acknowledged a bunch of roses received from her on his recovery from an attack of illness.

At the commemoration exercises on Washington's Birthday, Mr. Lowell read by request that part of his "Ode under the Old Elm" (Canto viii), in which a glowing tribute is paid to Virginia. In a letter to Miss Norton, the scene is thus described by the poet himself. After speaking of the address by Professor Gildersleeve on classical studies and that by Professor Sylvester on the study of mathematics, "both of them very good and just enough spicy with the personality of the speaker to be taking," he goes on to say: "Then I, by special request, read a part of my Cambridge Elm poem, and actually drew tears from the eyes of bitter Secessionists—comparable with those iron ones that rattled down Pluto's cheek. I didn't quite like to read the invocation to Virginia here—I was willing enough three or four hundred miles north—but I think it did good. Teackle Wallis (Charles will tell you who he is), a prisoner of Fort Warren, came up to thank me with dry eyes (which he and others assured me had been flooded), and Judge Brown, with the testifying drops still on his lids."

Lowell was a constant listener to Child, and he enjoyed the lectures as much as any of us. "You missed a great pleasure," he says to Professor Norton, "in not hearing him read the "Nonnes Prestes" tale. I certainly never heard any thing better. He wound into the meaning of it (as Dr. Johnson says of Burke) like a serpent, or perhaps I should come nearer to it if I said that he injected the veins of the poem with his own sympathetic humour till it seemed to

live again. I could see his hearers take the fun before it came, their faces lighting with the reflection of his. I never saw anything better done. I wish I could inspire myself with his example, but I continue dejected and lumpish. . . . Child goes on winning all ears and hearts. I am rejoiced to have this chance of seeing so much of him, for though I loved him before, I did not know how *lovable* he was till this intimacy." There is another letter from "Bahltimer" to Miss Norton, from which I make a longer citation, chiefly for the sake of Child—partly for the sake of Baltimore hospitality. "Sylvester paid a charming compliment to Child, and so did Gildersleeve. The former said that Child had invented a new pleasure for them in his reading of Chaucer, and Gildersleeve that you almost saw the dimple of Chaucer's own smile as his reading felt out the humour of the verse. The house responded cordially. If I had much vanity I should be awfully cross, but I am happy to say that I have enjoyed dear Child's four-weeks' triumph (of which he alone is unconscious), to the last laurel-leaf. He is *such* a delightful creature! I never saw so much of him before, and should be glad I came here if it were for nothing but my nearer knowledge and enjoyment of him.

"We are overwhelmed with kindness here. I feel very much as an elderly oyster might who was suddenly whisked away into a polka by an electric eel. How I shall ever do for a consistent hermit again, heaven only knows. I eat five meals a day, as on board a Cunarder on the mid-ocean, and on the whole bear it pretty well, especially now that there are only four lectures left."

Mr. Lowell engaged to come again a year later, and to take Don Quixote for his theme, but in the meantime President Hayes selected him for the legation at Madrid, from which he was soon transferred to London. I met him in London as we were entering the gateway of the Fisheries Exhibition on "American Day." "I must make an opening

speech," he said, "as the presiding officer, and I have no idea what to say." "Tell them the story of the American oyster," I replied. "What is that?" he asked. So I told him that our Baltimore biologist, Dr. Brooks, had discovered recently that the American oyster differs from the European oyster by beginning its career outside the parental shell. In the oyster world, as in the human world, young America is eager to begin life on his own account, without parental supervision. Pretty soon I heard Mr. Lowell tell the story in his agreeable way, and it was correctly given in the report of his speech.

Professor Child was the most companionable and lovable of visitors. He had not been accustomed to the lecture platform, and was evidently both surprised and delighted by the reception given him. His theme was Chaucer. It was before the day of Lounsbury's masterly volumes, and Child's narrative of Chaucer's life, his pictures of Chaucer's time, his exposition of Chaucer's language, and his Chaucerian pronunciation of passages from the "Canterbury Tales" were a fresh contribution to English literature. Everybody who owned a Chaucer brought it to the lecture-room, and those who owned no copy betook themselves to the book-stores. The local supply was soon exhausted, the libraries were despoiled, and for days there was "a corner" in Chaucers such as history has never before recorded, and never will again. In the second year Child read us old ballads, in different versions and texts. This was part of his *opus magnum*—learned, exhaustingly so—but not nearly as acceptable to his auditors as his Chaucerian discourses. I think he may have been conscious of this, for he volunteered some extra appointments, in which he read Shakespeare with almost as much skill as, in later days, Horace Howard Furness. The memory of Professor Child is still a cherished possession. I have many letters from him, almost all of them full of messages to or enquiries after those whose acquaintance he made on those two

memorable visits. All these memories have been recently revived by the gift of a medallion likeness of Child by Miss Upshur, of Boston. When Dr. Kelley made us this present, we held a meeting to commemorate the lectures of early years, and to dwell upon the rare attainments of Professor Child, as a scholar, his rarer virtues as a friend.

Mr. Edward A. Freeman, the historian, would have been better appreciated by the Americans whom he addressed, if they had understood his tenses and moods, or, in other words, if they had mastered his mode of speech. It has often seemed to me that scholars, certainly those who dwell within college walls or live secluded lives, have each of them his own "lingo." By this I mean that each has his characteristic use of words, and if you would quickly apprehend his meaning you will do well to observe his habitual diction. A word of praise, even a laudatory tone, means more from some men than a paragraph of eulogy from others. So likewise with criticism and censure. Now the minute exactness which is apparent in Freeman's writings, and is one of his great merits, governed his familiar correspondence and conversation. For example, his letters from America give many allusions to the epithets by which he was accosted. He is offended, or pretends to be so, because they call him "Professor" and "Doctor." "Once," he says, "I was called 'Colonel.'" He declined to speak at the University because he was under engagements to give lectures at the Peabody Institute. If he would not "lecture," I asked him to give some familiar talks to the students. "Familiar talks?" he said ironically. He seemed to be as much surprised as if I had asked him for nursery tales. "Well, conferences," I suggested. "Do you mean that the students are to do a part of the talking and I a part?" was his next inquiry. I forget how we got round the difficulty, but I believe that the term "informal lectures" suited him. At any rate he spoke, and made many friends among us. "There are not so many swells here at Balti-

more as at the 'Hub of the Universe,' but we have made some pleasant acquaintances here—judges, professors, and others. Johns Hopkins, his University, seems to be doing very good work"—so wrote the historian from Baltimore, November 25, 1881. He took a great liking to Professor Herbert B. Adams, to whom he alluded in phrases of just praise, in his books on America; and Adams took a great liking to Freeman, of which there is a lasting memorial. Over the lecturer's desk in the historical room were words of Freeman which appealed strongly to Dr. Adams, "History is past politics, and politics present history"—the motto, likewise, of Adams's series of historical studies. "Mr. Freeman, where did you write your great work on the Norman Conquest?" asked a modest student, expecting as an answer, no doubt, "the British Museum" or the "Bodleian." "In my own library. Where did you suppose?" came the gruff reply. I have been credibly informed that when conversation lagged at a dinner-table the great historian was known to nod. If this was so, it is not a solitary instance of the soporific tendency of advancing years.

Professor Bryce, as it happened, was in Baltimore at the same time, and the two men rendered a great service to the State of Maryland by urging the Legislature to make a liberal appropriation for printing the colonial, or more strictly, the provincial, records of that remarkable, in some particulars that unique, Commonwealth. Freeman's name is still held in personal reverence among our men of that day. A few years after his visit, in spending a Sunday at Trinity College, Oxford, I found him robed, sitting in a stall, as an Honourary Fellow, at early morning prayers. Then and later he was full of courtesies and kindness.

As we went into the dining-hall on "Gaudy day," my escort pointed to a portrait on the wall, and said: "That is your great enemy, Lord North;" and when I repeated the remark a few minutes later to Freeman, "Yes," he said, indi-

cating another portrait, "and that is your great friend, Lord Chatham." He was not at his ease in Oxford, especially not in a professor's chair. "It is all so disappointing and disheartening"—these are his words. "I have tried every kind of lecture I can think of, and put my best strength into all, *but nobody comes!*" This was pitiful, indeed. I think the fault must have been in the system, not in the man. Certainly such students as listened to him in Baltimore would have been delighted to follow the master for a year through the mazes of historical research. They might not have cared for didactic lectures, crowded with detail, but they could not have failed to watch closely the methods followed by a great investigator, his ways of finding out, his habits of verification. After all, a great teacher is not to be measured by his learning only; it is rather by his example.

Although I am not one of those who knew Freeman best, I would echo the words of Professor Bonney, who thus wrote of him: "He always reminded me of a lion, and had he roared when roused it would have seemed quite natural. Some men complained that, like the king of beasts, he was apt to rend those who crossed his path. I can only speak of him as I found him—one of the kindest of friends, most tolerant of my ignorance, and ever ready to open to me his stores of knowledge."

One word more let me add. Freeman's correspondence is racy in a high degree; everybody should know it. To appreciate the extraordinary acquisitions, industry, and versatility of this historian, it is only necessary to glance at a full and well-arranged list of his principal writings from 1846 to 1892, which is given at the end of his Memoirs.

Let us hear the conclusion of the whole matter. In the conduct of a university, secure the ablest men as professors, regardless of all other qualifications excepting those of personal merit and adaptation to the chairs that are to be filled.

Borrow if you cannot enlist. Give them freedom, give them auxiliaries, give them liberal support. Encourage them to come before the world of science and of letters with their publications. Bright students, soon to be men of distinction, will be their loyal followers, and the world will sing a loud Amen.





INCIDENTS OF THE EARLY YEARS



VI

INCIDENTS OF THE EARLY YEARS

"THE life within college walls," of which the college songsters of my day used to sing, is, in general, free from excitements, at least from any excitements that are of interest to the non-participants. I am not speaking of undergraduates, who have athletics, fraternities and politics, but of teachers and advanced students whose days are monotonous, passed in quiet, hidden, often solitary devotion to study. New books, instruments, and periodicals give flavour to their pursuits and evoke new ideas. This is the excitement that the scholar loves. To the public his occupations are not only forbidden—they seem dry and fruitless, certainly imbued with incomprehensible dulness; for while the world welcomes the results, it cares no more for the processes of study and investigation than children care for the receipts of the pastry-book. When a scholar interprets the history of the Chaldæan Deluge, written upon a tablet of clay and long buried in Mesopotamia, a new chapter is opened to the reader of the Book of Genesis—but it is more than probable that the general reader knows little of the century of cuneiform scholarship from Grotefend to Haupt, by which this extraordinary story has been made intelligible. It is just the same in every branch of study: conclusions are welcomed, especially in the form of benefits; processes are forgotten. Yet dull as the life of a scholar appears to the outside world, it is often varied by incidents that are entertaining and inspiring. Some such occurrences I propose to narrate.

Of late years, international comity has led to academic celebrations of an international character. They are ostensibly intercollegiate, but they are in reality of broader scope.

Within the last five-and-twenty years Bologna, Padua, Heidelberg, Glasgow, Cracow, Montpellier, Edinburgh, and Dublin, among European universities; Harvard, Yale, Columbia, Princeton, Williams, St. John's, Chapel Hill, Bowdoin, and Union, among American institutions, have invited the world of science and letters to be represented at celebrations, centennial, sesquicentennial, bicentennial, tercentennial, and even quinquennial and sextennial. The ceremonies on these occasions are among the most pleasant as well as the most brilliant events in academic life. Faculties and students, with the dignitaries of civil and ecclesiastical stations, take part in jubilees prolonged through several days. Ordinary commencements, commemorations, and convocations are cast into the shade.

The latest, and to me, for many reasons, the most memorable of the academic festivals that I have attended, is that which commemorated the 200th anniversary of the foundation of Yale College, when the President of the United States, the Chief Justice, the Secretary of State, two foreign ambassadors, a representative of the King of Sweden, the Premier of Japan, an eminent jurist from St. Petersburg, a renowned surgeon from Berlin, a Roman Catholic archbishop, a bishop of the Protestant Episcopal Church, scores of college presidents and professors, dozens of men of letters and representatives of science, with other dignitaries not a few, came together to offer their congratulations and praises to the Puritan college. A thoughtful observer, in the midst of all this splendid array, might have said that the vestiges of Puritanism were passing away, twenty-six decades after John Davenport preached his first sermon in the wilderness near the spot where we were assembled. Were we in fact proclaiming the passing of Puritanism?

The culmination of these brilliant festivities came on the last day, when an original Greek ode was sung to original music, and the President of the United States, having re-

ceived the hood of a Doctor of Laws, stepped forward on the platform to congratulate the university and its guests. There were two other remarkable incidents. One evening the graduates and undergraduates, thousands of them, marched under the elms, with torches, banners, mottoes, and music—a most impressive throng; and another evening, in the open air, beneath a brilliant star-lit sky, in the presence of several thousands of men and women, memorable events in the history of Yale were presented in dramatic tableaux, and in the interludes the welkin rang with college songs.

I have seen nothing abroad that was finer in the way of academic rejoicings than these Yalensian, but it must be admitted that there are fewer black gowns, more bright-coloured robes, in the European gatherings than in ours; so the foreign shows are more striking. At Montpellier I was startled to find that the American delegation, following alphabetical precedence, came to the front of the procession, just after Allemagne, represented by Helmholtz, and the plain black clothes that I wore seemed out of place. I ought to have worn a gown and I ought to have presented a diploma.

In Dublin, as a speaker for the United States, I made an explicit and pointed reference to the great philosopher from Trinity College, who gave away land and books for the benefit of American colleges, and who died the Bishop of Cloyne, not far from Cork. These were the delegate's words: "One alumnus of Trinity College is beloved beyond all others by Americans. I need not even pronounce his name. Some of us have been at his see in Cloyne; we have looked upon his ideal form cut in marble so full of life and beauty that we felt his presence, and uttered face to face our words of gratitude and honour." "Name him," cried the undergraduates, in a distant gallery, chaffing the speaker. "Who was he? Who was he?" was their vociferous shout. "It would not be necessary," I replied to them when they paused, "in an American college, under conditions like these, to

pronounce the name of that eminent graduate of Dublin, George Berkeley." The jeers became cheers, and the boys gave generous applause to the name of the illustrious bishop whom they did not recognise as a benefactor of Yale and Harvard. I recall another incident. After Henry Irving had received an honorary degree and the company was leaving the *aula,* the students, neglecting the other famous men, took the actor upon their shoulders and bore him to a neighbouring portico, where he made a graceful acknowledgment of their rude but hearty and well-meant courtesy. It was a striking illustration of the readiness of human nature to applaud those who have given us pleasure and to pass unnoticed those who have given us knowledge.

In Cracow, the ancient capital of Poland, there was a noble commemoration of Polish education, literature, science, and art. The city was brilliant with colours, the procession was dignified, and the reception of delegates by the noble rector, Count Tarnowski, in the church, from which the sacred paraphernalia had been removed, was most impressive. As a representative of American colleges, I did not fail to mention Kosciusko, the friend of Washington, the upholder of American independence, whose lofty cairn looks down upon the city of Cracow, and the allusion was well received; but when the speaker proceeded to speak of Sienkiewicz, the great writer, whose works were read and admired in lands across the seas, the house burst forth in applause which brought to his feet the illustrious author of "Pan Michel" and "Quo Vadis," who had been sitting just in front of the platform. When the honorary degrees were announced it was with great pleasure that I heard among them the name of the American astronomer, Simon Newcomb. On another day, a statue of the illustrious Copernicus was unveiled in the middle of the beautiful quadrangle which he trod as an undergraduate 400 years before. Remembered as a student for four centuries!

Such entertainments produce a strong impression on those who take part in them, and on other intelligent observers, for in a very striking manner these gatherings show the brotherhood of man and the co-operation of scholars in the advancement of knowledge. That intercourse by epistles, of which we have voluminous records in the correspondence of Erasmus, of Leibnitz, and many others; that careful making notes of personalities, such as we see in the diary of Dr. Stiles, recently printed, have given way to the well-edited periodicals which nowadays embody the notes and progress in every branch of learning. Modern ingenuity and necessities have also devised innumerable societies, associations, and academies which hold frequent meetings for those engaged in similar pursuits, but these are usually restricted to the citizens of one country, and to those who are bound by the ties of specialisation. In order to bring together scholars of many lands and of all departments, literary and scientific, the representatives of law, medicine, theology and philosophy, great ceremonials are requisite, and the universities have naturally become the places for them. Everyone who has participated in the jubilee of a venerable seat of learning will surely carry with him, as long as he lives, the memory of the faces, the speeches, the greetings of those whom he met, nor will he fail to remember the unity of knowledge, its boundless extent, the importance of combined efforts for its advancement, and likewise the inanity of rivalry, the pettiness of jealousy, and the joyfulness of association for the good of mankind.

There are lesser festivals which also leave delightful memories; and some which I recall stand out in the vista of the past like beacons on a quiet sea-shore. For example, long after the first sorrow that is felt when a man of mark has departed, a commemorative meeting has become a time of rejoicing that such a man has lived and that we have been permitted to come under his inspiring influence. Fifty years after the birth of Robert Louis Stevenson we commemorated,

in Baltimore, his life and works. Special students of English literature wrote short and appreciative essays; portraits and letters, and examples of his "copy" were brought to us by one of his friends, Mr. E. L. Burlingame, the editor of *Scribner's Magazine;* various editions of his books were exhibited, and a select company of his readers, who met for this commemoration, felt as if they had been personally introduced to the great romancer from the land of Scott. A similar commemoration brought Professor Francis J. Child to mind.

But the most noteworthy of such events was one that attracted many people from a distance and elicited from others who could not come, their words of appreciation. Sidney Lanier, like a brilliant comet, appeared on our horizon in centennial year, when his ode, written for the opening of the Philadelphia Exhibition, drew forth the cool criticisms of widely scattered readers (who did not appreciate his purpose in the composition), and almost simultaneously, enthusiastic plaudits from thousands of auditors who heard the rendering of the words to the stirring music of Dudley Buck. Lanier was then living in Baltimore, known to many as a player upon the flute in the concerts of the Peabody Conservatory, and, to a few of the most cultivated, as a writer of verse, as a student of English literature, and as a gifted critic. It was natural that he should be invited to lecture before the university, and an invitation to do so he gladly accepted. The summons reached him in a period of great despondency and physical distress. He was exhilarated by the opportunity and did his best—and his best was very good—to inspire and instruct those who came within the sound of his voice.

In the second of the two courses it was obvious that the hand of Death had touched his shoulder, and the unwelcome presence of the inevitable was perceptible as the lecturer tottered up to his desk and delivered his message, with cheer,

sitting resolute and buoyant as if he were to drink "a stirrup cup." When he died, we paid to his memory the tributes of grief and affection, but it was not the time for an appreciation of his poetry. That came later.

Seven years after his death a company of his friends came together in another mood—less mournful because there had been time to review his life and writings, to trace his influence upon those whom he had taught, and to estimate his rank among American poets. We could now be assured that though the pen had fallen from his hand and the flute no longer responded to his inspiration, yet the melody of his voice was still resonant, and the memory of his brave life was beginning to "smell sweet and blossom in the dust."

The immediate occasion for such an assembly was the gift of a bronze bust of Lanier, modelled, late in his life, by a sculptor of Baltimore, Ephraim Keyser. It is a striking portrait which arrests the attention of every passer-by, by its union of reality and ideality. One day as we stood beside the pedestal I said to a German pathologist who had never heard of Lanier, "He was a poet greatly beloved and greatly mourned by us." "Hm," was his response, "tuberculosis." I called the attention of another visitor, who knew something of Lanier, to the same portrait. "Yes," he said, "Christ-like."

To our memorial meeting Lowell wrote of Lanier as a man of genius with a rare gift for the happy word; Stedman said of him that he had "conceived of a method, and of compositions, which could only be achieved by the effort of a life extended to man's full term of years; the little that he was able to do belonged to the very outset of a large synthetic work"; Gilder spoke of the recent deaths of Emma Lazarus, Sill, and Helen Jackson, followed by Lanier's premature departure, and added: "Every now and then there crystallised in his intense and musical mind a lyric of such diamond-like strength and lustre that it can no more be lost from the

diadem of English song than can the lyrics of Sidney or of Herbert"; Father Tabb, kindred spirit, friend tried in adversity, read a memorial sonnet; other verses came from Mrs. Turnbull, and from Burton and Cummings, who had been Lanier's pupils; and Miss Edith M. Thomas, thinking of a line of Lanier's, "On the Paradise Side of the River of Death," wrote these lines which I copy from her autograph, a greatly valued memento:

The River flows, how softly flows
(The one bank green, the other sere),
How sweet the wind that hither blows.

Its breath is from the blightless rose.
Its voice, from lips of leal and dear—
The River flows, how softly flows.

Beyond, in dreams the spirit goes,
And finds each lost and lovely peer—
How sweet the wind that hither blows.

Brief while the gleaming vista shows
A singing throng withdraws from here—
The River flows, how softly flows.

There mounts the wingèd song, there glows
The ardour white, of rare Lanier—
How sweet the wind that hither blows.

His voice rang fearless to the close,
He sang Death's Cup with cordial cheer—
The River flows, how softly flows:
How sweet the wind that hither blows.

It is delightful to observe the growing reputation of the gifted Lanier, and the increasing demand for all that he has written. Few men of letters in our land have left a more pathetic or a more inspiring record. Nothing could quench the poetic fire that burned within him. The *res angusta domi,* war, confinement in a military prison, continued ill-health, the necessity of providing support for a large family,

the removal of his home from place to place, difficulty after difficulty never broke him down.

Always cheerful, always gallant, always trustful—his presence in any company was quickening and inspiring. Let him enter a horse-car, and everyone was conscious that there was a man of mark; let him come upon the stage in a concert-room, a buzz would go through the audience; let him lecture, it was clear that he was one who would uphold the loftiest ideals. It is but slight praise to add that his name is cherished in Baltimore as a priceless heritage. The memoir by Professor Edwin Mims, of Trinity College, North Carolina, admirably portrays the rare character of Lanier.

Sacred memories and sad will always linger in the principal hall of our physical laboratory, for there we commemorated Rowland after we had placed his ashes (according to his request) in a vault very near to the famous dividing engine, to which he gave so much of his time and thought. Nor is this our only mournful association with that place. Here it was that Phillips Brooks, a short time before he died, met the students one October afternoon, and made one of the last, one of the best, one of the most effective of his religious discourses. As he spoke, animated by an audience that he had never met before, made up exclusively of students and their teachers, not a few of the listeners were impressed by the almost unearthly looks and tone with which his uplifting message was delivered. Not long afterward his voice was silenced forever, and then the fragmentary notes of this discourse, taken down at the moment, or recalled to memory, were transcribed and printed.

Three great international jurists have been commemorated in Baltimore—Bluntschli of Heidelberg, Lieber of New York, and Laboulaye of Paris. In view of their intimate relations and close concord, somebody (I believe it was Lieber) called them an "international clover-leaf." This might pass muster as a metaphor, but when photographs of the three

faces were pasted upon a huge trifolium the metaphor vanished and the reality was more amusing than artistic. Professor Adams had been the pupil of Bluntschli, and on the death of his master was eager to secure his library. The German citizens of Baltimore responded instantly to his wish, and contributed the purchase-money, and when the books came we had a Bluntschli celebration. With his books came his manuscripts; and this led Mrs. Lieber to send to us those of her husband; and, later, the sons of Laboulaye sent us interesting examples of his handwriting. The portraits of these three men look down upon the cabinet which contains their works, exerting a silent and unconscious influence upon the students of public law.

One day as I was walking down our thoroughfare, North Charles Street, I met Mr. Innes Randolph, of local distinction as a man of versatile talents. "See here," said he taking the wrapper off of a number of marble fragments, "this is an original bust of Chief Justice Marshall. I am going to put the pieces together and take a plaster cast of them. If I succeed, you shall have a copy." Not long afterward he brought me a fine cast of this admirable likeness of the great jurist. The original was the work of Houdon, and the copy preserved the exquisite chiselling and the fine expression of the marble. I showed the cast to the American sculptor, Mr. William W. Story, when he was about to make his statue of Marshall for Washington. He was delighted and told me that he had seen no likeness of the jurist so satisfactory as this. The gift of Mr. Randolph suggested that we should have a commemoration of Marshall, so we invited his successor in office, Chief Justice Waite, to come and make a presentation address, which he kindly consented to do. A plaster cast at best is fragile, but by the generosity of a lady we have been so fortunate as to have this one reproduced in bronze, by an artist in Paris, and a copy of it is awarded every year to a graduate student who shall have produced some noteworthy

and meritorious contribution to historical and political science. Copies of the replica have often been asked for, but none can be obtained except in the regular way by which Woodrow Wilson, Albert Shaw, and others have gained the prize.

Certainly the rarest, perhaps the most remarkable testimonial ever given to a college president in modern times was given to me. It was a unique diploma, and these are the circumstances under which it came: I met my colleague, Professor Paul Haupt, casually at the Murray Hill Hotel, in New York, and mentioned that it was twenty-five years that very day, December 30, 1899, since I was called from California to Baltimore. We parted and took different trains homeward. Early the next day there was left at my door a letter in cuneiform script, which Dr. Haupt had composed upon the way home, and lest I should be rusty in the language of Nineveh and Babylon a translation came, too. A little later I received a copy of the same letter, cut in wedge-shaped characters upon a red clay tablet and baked, so that its aspect was exactly that of the letters exhumed in recent years on the sites of ancient Assyrian cities. The language has not a little of the hyperbole which is common in the flowery phrases of the Orientals, so I shall not venture to quote from it more than the opening and closing lines. In a parallel column the reader may read, if he chooses, a transliteration, in Roman characters, of the wedge-shaped characters, of the original letter:

To the great chief,	Ana ašâridi rabî
Dâni 'ilu the son of Gilmânu	Dâni 'ili mâr Gilmâni
thy servant Pa'ûlu the son of Ha'uptu:	arduka Pa'ûlu mâr Xa 'upti.
A hearty, hearty greeting to my lord!	Lû šulmu ana belî 'a adannîš addanniš!
On the auspicious day when 25 years ago	Ina ûmi mitgari ša ultu XXV šanâti

thou wast chosen	tannamiru atta
to the Presidency of the great school,	ana ašaridûti ša bît mummu rabî
the house of teaching and instruction,	bît sûdi u šulmudi
the seat of the Lord of Inscrutable Wisdom,	šubat Bel nîmeqi
established in the Monumental City—	sa ina âl Çalmâni uktînûni
.	
Thou hast erected a monument above all monuments of the Monumental City.	çalmu tazqup elî calmâni kâlišunu
The splendor of thy name is established forever.	ša âl Çalmâni melamme šumika ana balâṭ ûme rûqûti taltâkan.
Written upon the swift cars of the road of iron,	Saṭîr ina elî rukûbe xitmutûti ša sullî barzilli
between the City of Brotherly Love and the Monumental City,	ina berit âl Narâm-axûti u âl Çalmâni
on the 30th day of the 12th month of the year of our Lord 1899	ina ûm XXX ša arax XII šatti Belini MDCCCXCIX.

I shall never forget a certain illustration of the narrow margin between the sublime and the ridiculous. Professor Royce, of Harvard College, came to repeat in Baltimore a very serious philosophical essay which he had read at Harvard, and which was strongly commended to us by Dr. Andrew P. Peabody. I will not state his exact line of thought, but after he had been speaking for nearly half an hour in a room that was crowded and, I must add, not well ventilated, he paused, having left a solemn impression on the minds of his audience respecting a fundamental truth. As we were sitting there silent, thoughtful, and expectant, a voice came from the middle of the hall, and one of the auditors said, with emphasis: "Let us hear the other side of that question." We looked around to discover the speaker, and those

of us who were in front recognised a distinguished judge of the Federal Court. None of us could tell what he meant by this abrupt and judicial utterance. The interruption was brief and the lecture went on as it began. I had hardly reached home when a note came to me from the judge to this effect: "I must apologise for that extraordinary interruption. The truth is that the room was warm, I had just dined, the lecture was serious, and I dropped asleep. When the lecturer ceased to speak, I suddenly awoke, and, thinking I was on the bench, called out, 'Let us hear the other side of that question.'"

When the Johns Hopkins University began its work all the members were lonesome. The faculty was small, the students few, the graduates none. A good many squibs were fired at us in the newspapers. We came from distant parts of the country and from abroad, we were educated by different methods, we were not quite sure of one another. We were to be welded into a compact body. But welding requires heat, and, after the novelty wore off, our enthusiasm was lessened, and we began to long for the warmth of sympathy. To promote good-fellowship a suggestion was made that all college graduates living in Baltimore should be invited to meet together and dine. The idea found favour, and on Washington's Birthday a large company of educated men, having listened to the public exercises of the morning, assembled for a social hour around a well-spread table in the Academy of Music. By common consent Mr. Teackle Wallis, most brilliant among the leaders of the bar, a man of wit and eloquence, of fire and grace, was invited to preside, and he did so with spirit and tact. Presently he proposed the sentiment, "The Universities of Great Britain," and he called upon Professor Sylvester to respond. The famous mathematician rose, uttered a few half-audible commonplaces, halted, searched his vest-pocket in vain for notes, and sat down, saying, as he did so: "I ought to have pre-

pared myself for this occasion, but instead I went to the opera last evening, for I could not miss the opportunity of hearing Gerster; so I beg to be excused." It is needless to say that the audience, who expected from him something unusual, did not expect this sort of a surprise. Quick as a flash, the presiding officer, Mr. Wallis, was on his feet, smiling at the discomfited professor and saying, "I hope that will always be the motto of the Johns Hopkins University—*Opera non Verba.*"

I have heard travellers say that the pleasantest part of travel is the coming home. I have sometimes thought so, and I have also thought that the pleasantest part of life is its closing chapter, when memories take the place of hopes, cares are lessened, opportunities are enlarged, and friendships multiplied and intensified. If I were to follow the example of Lecky, and draw the "Map of Life" with such cartographical knowledge as has come to me, I should mark the age of seventy as the Cape of Good Hope, and for the cheer of those who are doubling this cape I should show that it leads to a Pacific sea within whose bounds lie the Fortunate Isles.

It is certainly a great delight to look far back upon undergraduate days, to follow the careers of classmates and friends, to recall the preferment of colleagues and associates, and it is beyond all other academic pleasures to see how large a proportion of former pupils have risen to distinction and usefulness in the various walks of life. When I go back to New Haven and find that "old Yale," if that means the group of buildings, has completely changed from brick to stone; and if "old Yale" means the faculty, that all my teachers lie in the Campo Santo while their successors are turning grey, a moment's sadness comes over me, but it soon gives way to grateful remembrance, and the regrets that are inevitable lead up to the satisfaction that though the body has perished, the spirit of "old Yale" is still alive and pres-

ent. How it is possible for anyone to be a pessimist when such progress is studied, I cannot understand.

California, in a different way from that of Connecticut, affords striking examples of the educational advances of the last few years. The men who crossed the isthmus and went around the cape when gold was discovered, have lived to see the day when two strong universities, the one fostered by the State, and the other endowed by private munificence, are attended by thousands of students, who have access to the very best books and instruments, and are taught by teachers whose reputation for learning and talents is everywhere acknowledged.

I went back to Berkeley, twenty-five years after I had seen the infant university transferred from Oakland to its new and permanent home, directly in face of the Golden Gate. On a bright afternoon in autumn thousands of people were assembled upon the campus in the open air to welcome Dr. Benjamin I. Wheeler, just entering upon his career as president of the University of California, and to hear his inaugural address. Dr. Jordan, already wonted to the cares of the Stanford University, was there to give a right hand of fellowship, and I had been brought from the East to show the connection between the present and the past. Around us were a score of academic buildings. Pleasant houses lined the streets, which bore the names of Dwight and Bushnell and other Eastern worthies. In the distance we could look out of the Golden Gate to the Pacific Ocean.

I will not endeavour to show how much history was here brought to mind, from the days when Sir Francis Drake sailed along this coast, to the time when Alaska was bought, the Sandwich Islands annexed, and the more distant Philippines brought under our sway. But the nearer lessons were likewise vivid. It was hardly sixty years since a Yale geologist, exploring the coast, had descried the signs of gold; it was half a century since the *auri sacra fames* had brought to

the Pacific Slope the strong men of the Eastern States, ready to supplant the institutions of Spain with those of the United States. Among them were those who were determined that, like Massachusetts and Connecticut, California should begin its new era with a college crowning the system of education. Some of these pioneers were still living. In the middle of the campus we stood upon the rock where the name of Berkeley was proposed as the name of the university site, a rock upon which have been cut the prophetic words, "Westward the course of empire takes its way." Yet the best sight of all was the throng of well-educated men and women here assembled, imbued with the love of knowledge, trained for the highest service of the church and state, by agencies introduced only fifty years ago. The scene was a tableau displaying the growth of an idea. The knowledge of such progress should be assuring to those in our Southern States who are now beginning new movements for the advancement of public education.

As I thus consider the last few years, the most remarkable change, among all that occur to me in the domain of education, is the recognition of the university as an entity distinct from the college. This is not an American discovery, nor is it a triumph of the nineteenth century. Colleges and universities have not been confounded in Europe. Nor did our forefathers lose the perception of a difference. So far back as 1777, the famous President Stiles drew up a plan of a university for New Haven, which is mentioned in his diary, lately published by Professor Dexter. The word was used much earlier in Harvard. Nevertheless, it is true that the American college grew to be so important and so well adapted to the needs of the community that it obscured the university idea. Even so recently as the middle of the last century universities were commonly regarded as groups of schools and establishments for superior education. So are they still. This is as it should be. But the scope of univer-

sities has broadened, as the progress of society has demanded facilities for study in many branches of knowledge, superior to what can be provided for undergraduates. Science has demanded laboratories; letters have demanded libraries, and with them seminaries for the handling of books. Thus the distinction between *gymnasia,* where discipline and training are received, and the race-courses, where the runners are striving for a prize, has been defined. The words "college" and "university" are still confounded by the fetters of usage and nomenclature, but the difference between enlarged university methods, adapted to matured minds, and the restricted methods essential to youthful discipline are generally admitted. For want of a better term, "graduate studies" is the term that has come into vogue for higher work. Yale, Princeton, and Columbia have changed their corporate names so as to emphasise their changing conditions. Scores of institutions now offer, at least in their catalogues, "graduate" instruction—although it is often of an unsatisfactory and rudimentary character, and there is a serious danger that the country will soon have a superfluity of feeble universities, as it has had a superfluity of poorly endowed colleges. Reaction has begun. The stronger foundations have combined in an informal federation; and colleges of the highest character are saying, "We claim to be colleges, and make no pretence that we are anything else."

The effect of this movement has been seen in the professional schools, which were formerly open to persons who had shown no preparation for the work they were called upon to undertake. Now in the best schools of medicine, law, and theology the presentation of a diploma or the passing of a prescribed examination is requisite. If they have not yet become schools for graduates, the tendency is in that direction. Coincidently, the colleges are offering greater freedom in the choice of courses. Special preparation for certain future callings may be secured by undergraduates, by means of the

group system in some one of its modifications, or by absolute election. In no one of the professions is preliminary training more important than it is in medicine. The physician should indeed be a man of liberal culture, but he must also be a man of technical skill, and that technical skill can only be acquired by habits of close observation, by a knowledge of the physical and chemical laws of nature, by familiarity with the forms and functions of plants and the lower animals. Probably the most remarkable advances in higher education within the last twenty-five years are to be found in medicine. Still greater advances are already in sight.

These reminiscences were in type when two incidents occurred, among the pleasantest and most remarkable in a long experience of academic life. I gave up the presidential chair in the Johns Hopkins University, not because I was tired of it, not because I was conscious of bodily infirmity, but out of deference to the widespread usage of this country, which suggests that, at a certain age, seniors should make way for juniors. The unanimous choice of a successor, President Remsen; generous additions to our resources, especially the new site offered by Baltimore friends; and the enthusiasm of our graduates when they assembled to celebrate our twenty-fifth anniversary, have given abundant evidence that the time for a change of administration was felicitous.

I was looking forward to a period of comparative leisure, when an interview with Mr. Andrew Carnegie, the evangelist of beneficence (as I venture to call him), who has preached and practised "the gospel of wealth," completely altered the outlook. Near the end of November, 1901, I called upon him, by invitation, at his library in New York, where he was sitting surrounded with books and pictures and by innumerable testimonials of affection and gratitude. On the walls were mottoes that seem to have been the guides of his life. One person was present.

I cannot repeat the conversation of that morning, although

the principal remarks of Mr. Carnegie are impressed upon my memory. He was in a very thoughtful mood, inclined to ask searching questions, and quite able to keep his own counsel. At length he said: "I am willing to give ten millions for an institution the purpose of which shall be the advancement of knowledge." This was not all that he said, but it is all that I tell. It is quite enough, for in that single phrase is the germ of the extraordinary plans that have since been developed. People who have never made large gifts think it an easy matter to organise "an institution." Those who have tried find it difficult. With several such persons I have had confidential relations, and I have seen that (to use the Quaker phrase) they have had "concerns." One "concern" is whom to trust, the other "concern" is what to confide. It was by no means a simple or an easy task to organise the Carnegie Institution. Precedents were wanting.

Mr. Carnegie raised many hard questions: How is it that knowledge is increased? How can rare intellects be discovered in the undeveloped stages? Where is the exceptional man to be found? Would a new institution be regarded as an injury to Johns Hopkins, or to Harvard, Yale, Columbia, or any other university? What should the term "knowledge" comprise? Who should be the managers of the institution? How broad or how restricted should be the terms of the gift?

These are only examples of the perplexing problems which presented themselves to one who was not anxious for fame; not devoted to a hobby; not inclined to impose limitations, but who had an eye single to the good of his adopted country, and through our country to the good of the world.

It will not do for me to tell at this time who were his chosen counsellors in the incipient stages of his plan, but they were many in number, including some whose names have not been publicly mentioned. Gradually the idea, which was seen at first in broad outlines only, took definite shape, as,

under the sculptor's hands, an image becomes shapely, comely, and life-like.

It was the original purpose of Mr. Carnegie to make the gift directly to the nation, and for that reason he communicated an outline of his plan to the President of the United States, by whom it was received with the most generous appreciation. Reflection led to a change. On the whole, it was thought best to organise an independent corporation, or body of trustees, and charge them with carrying out the project. Upon such a board the President of the United States, the President of the Senate, and the Speaker of the House consented to serve, *ex officio*.

The secretary of the Smithsonian Institution, Mr. Langley, and the president of the National Academy of Sciences, Mr. Agassiz, were also officially designated members of the Board.

Three members of the Cabinet were added by name, a justice of the Supreme Court, two other distinguished judges, several business men of the highest standing, a lawyer and diplomatist of international fame, heads of two governmental bureaus, the chief of the New York Public Library, a distinguished physician, a Senator, and two men who had been prominent in the promotion of higher education. They represented every part of the country—from Boston to San Francisco, from Chicago to New Orleans. I do not know that anyone could state the political or ecclesiastical ties of the Board. Every one of the trustees has been long in public service or wonted to the administration of important trusts.[1]

[1] Trustees elected by the incorporators at the request of the founder. Ex-officio: The President of the United States; the President of the Senate; the Speaker of the House of Representatives; the secretary of the Smithsonian Institution; the president of the National Academy of Sciences.—Grover Cleveland, New Jersey; John S. Billings, New York; William E. Dodge; William N. Frew, Pennsylvania; Lyman P. Gage, Illinois; Daniel C. Gilman, Maryland; John Hay, District of Columbia; Abram S. Hewitt, New

Then came another incident more memorable than the interview I have described and, perhaps, more important. By invitation of Hon. John Hay, Secretary of State, the trustees assembled for the first time January 29, 1902, in the diplomatic room of the State Department. It is truly a state apartment—spacious and handsomely furnished, the walls covered by portraits of the distinguished predecessors of Mr. Hay. Just above the chair of the presiding officer were the likenesses of Daniel Webster and Lord Ashburton, as if the old country and the new were alike cognizant of the proceeding. The formal articles of incorporation having been read, and temporary officers chosen, the princely giver rose and read his deed of gift. It was brief, in legal form, bestowing the sum of $10,000,000 on the Carnegie Institution for the Advancement of Knowledge. The restrictions were very simple and very wise. Mr. Carnegie then added a few remarks. I am not sure whether he read them or spoke them —but the substance of what he said has been placed on record, and it will always be regarded as the spontaneous utterance of a full mind at a very critical moment.

In these three papers it is made clear that the Carnegie Institution is not, as it has been called, a "university" or a place for the systematic education of youth, in advanced or professional departments of knowledge. Nor is it a memorial to George Washington. Mr. Carnegie disclaimed any intention of associating his name with that of one who stands alone. Its chief function is the encouragement of research. This may be done by stipends to individuals or to institu-

Jersey; Henry L. Higginson, Massachusetts; Henry Hitchcock, Missouri; Charles H. Hutchinson, Illinois; William Lindsay, Kentucky; Seth Low, New York; Wayne MacVeagh, Pennsylvania; D. O. Mills, New York; S. Weir Mitchell, Pennsylvania; William W. Morrow, California; Elihu Root, New York; John C. Spooner, Wisconsin; Andrew D. White, New York; Edward D. White, Louisiana; Charles D. Walcott, District of Columbia; Carroll D. Wright, District of Columbia.

tions, by the provision of costly apparatus, by the payment of assistants, or by the publication of memoirs. No branch of knowledge is excluded from the scope of the trustees. No fetters are imposed upon their action. They are expected to see what the suggestions of the wisest men in the land will bring forth.

It is clear that in the development of this plan, the advice of the ablest men must be sought. Accordingly, it is the purpose of the Executive Committee, acting in the name of the Trustees, to ask the counsel of the wisest of our countrymen. They will not all be famous men. Some are known only in very limited circles—they are quiet men who are working out great problems, free from the observation of all except those whose studies are kindred. Others are known throughout this country and in Europe. Some may be found abroad. Already many valuable suggestions have been made; more are coming in. It will not be long before a group of astronomers are asked their advice in astronomy; of biologists in biology; of chemists in chemistry; of economists in economics—so on through the alphabet of the sciences. After this preliminary reconnaissance, a report and a plan will be prepared, and the conclusions made public. This will take time, months, certainly. But the opportunity is one that requires the most careful consideration, for everyone knows that institutions which are plastic in their incipiency soon harden like cement.

It is obvious that at present, certainly, there is no need of a stately building, like that of the Smithsonian; no occasion to establish a *Reichsanstalt,* like that of Charlottenburg, for the government has its efficient bureau of standards; no reason for adding one to the libraries and laboratories of Washington before some special need is manifest. Avoid duplication; help that which is good, and will be better with some assistance; seek out untrodden but promising fields of inquiry; utilise existing faculties instead of building up a new

academic body. Look out for minds of unusual capacity and promise.

These are the purposes of the Institution as stated by the wise and munificent founder:

1. To promote original research, paying great attention thereto as one of the most important of all departments.

2. To discover the exceptional man in every department of study whenever and wherever found, inside or outside of schools, and enable him to make the work for which he seems specially designed his life-work.

3. To increase facilities for higher education.

4. To increase the efficiency of the universities and other institutions of learning throughout the country, by utilising and adding to their existing facilities and aiding teachers in the various institutions for experimental and other work, in these institutions as far as advisable.

5. To enable such students as may find Washington the best point for their special studies, to enjoy the advantages of the museums, libraries, laboratories, observatory, meteorological, piscicultural, and forestry schools, and kindred institutions of the several departments of the government.

6. To insure the prompt publication and distribution of the results of scientific investigation, a field considered highly important.

In one comprehensive phrase he stated his aim as follows:

It is proposed to found in the city of Washington an institution which with the coöperation of institutions now or hereafter established, there or elsewhere, shall in the broadest and most liberal manner encourage investigation, research, and discovery; show the application of knowledge to the improvement of mankind; provide such buildings, laboratories, books, and apparatus, as may be needed; and afford instruction of an advanced character to students properly qualified to profit thereby.

Is not this conception of a plan and its inception unique in the history of civilisation? I know of nothing to compare with it.

When I began this series of reminiscences, I could not

have forecast this last development. Perhaps I have dwelt too long upon it. If so, my apology is the profound interest which has been shown in Mr. Carnegie's plans, and the opportunity that I have to speak of a few points "not generally known." The public may rest assured that the trustees are all of them alive to their responsibilities, and are seeking, before the full initiation of the work intrusted to them, to secure the light that many men of many minds will throw upon the problem. They will endeavour to follow the wise example of the founder, and seek only to promote the progress of knowledge and the good of mankind.



PUBLICATIONS



VII

PUBLICATIONS

I WILL now tell the origin of the publications which have been such a noteworthy factor in the usefulness of the Johns Hopkins University. While I was on the continent of Europe my attention was constantly called to the importance of encouraging professors to engage in independent investigations, and of providing means for the publication of such results as they might reach. In Germany, especially, it was regarded as essential to the life of a vigorous university that it should make contributions to knowledge, through the members of its staff. The Smithsonian Institution of Washington had set an admirable example in our own country. The *American Journal of Science* had been for many years a repository of important papers. The Memoirs of the Harvard Astronomical Observatory, and of the United States Naval Observatory, within their restricted field, were serviceable. The *Journal* of the American Oriental Society and of the American Philological Association were limited by want of pecuniary support. The *Proceedings* of such societies as the American Academy, the American Philosophical Society, the Connecticut Academy, and the American Association for the Advancement of Science, and other serials, furnished to some extent opportunities for printing, but all of them combined were inadequate to the demands of American investigators. Professor Newcomb in an article on Abstract Science in America, published in the centennial number (1876), of the *North American Review,* made a vivid portrayal of the deficiencies of the United States.

When Sylvester agreed to come to Baltimore, he was re-

quested to bring with him the *Mathematical Journal,* of which he had been one of the editors, but this was not practicable. His American colleague, Dr. W. E. Story, independently proposed the establishment of an *American Journal of Mathematics,* and, after a good deal of correspondence, it was decided to begin such a journal, in a quarterly form, and to ask the concurrent editorial aid of professors in other universities. It was intended that the *Journal* should be open freely to contributors in any part of the country. This important periodical has now reached its twenty-ninth volume.

The beginning of the *American Chemical Journal* was quite different. As soon as Professor Remsen began his duties he wished to publish the contributions to chemistry which were made in the laboratory under his charge, and he asked leave of the Trustees to print, from time to time, such reports. As it was thought best that they should appear in an established journal, the editors of the *American Journal of Science* in New Haven were asked to accept them. They declined, because their pages were more than full. Then an effort was made to secure their publication as supplementary communications to be separately paid for, like those which were printed by Professor Marsh respecting his discoveries. This proposition was also declined. The Professor of Chemistry then proposed to publish a journal, and to open its pages to other chemists throughout the country; and thus began the series which has continued, without interruption, until the present time. It was meant to be an American, not a local journal.

Professor Gildersleeve likewise felt the need of a journal which should be devoted to classical and comparative philology; and he was encouraged by the Trustees to establish the periodical which he has edited without interruption from that time until this. In 1876 there was nothing in the field except a meagre annual pamphlet issued by the American Philological Association and the learned memoirs

published under the supervision of Professor Whitney, by the American Oriental Society. The *American Journal of Philology* met with immediate success. It was so successful that, before very long, corresponding publications appeared elsewhere. In Baltimore the *Journal of Modern Languages* was instituted, first at the expense of the Professor of Romance Languages, Dr. A. Marshall Elliott, and some years later with aid from the University chest.

In history and politics many able students were soon assembled, under the inspiring leadership of Dr. Herbert B. Adams, whose instructions were reinforced in Economics by Dr. Richard T. Ely. The instructors and the students made investigations especially in the domain of American Institutional History, which were printed in successive numbers of a series entitled, " Johns Hopkins University Studies in History and Politics." These papers were widely circulated and attracted so much attention that persons connected with other institutions offered their contributions. The long series published under this title constitutes one of the most important works of reference for those who would become acquainted with the development of American institutions. The allusions to its value by Professor Freeman and by John Fiske are not to be overlooked.

The contributions to Assyriology and Semitic Philology by Dr. Haupt, deserve special mention, and there is a long list of separate volumes which would be included if this were meant to be a bibliographical list. The publications of the Maryland Geological Survey and of the Johns Hopkins Medical School are also noteworthy.





THE JOHNS HOPKINS MEDICAL SCHOOL



VIII

THE JOHNS HOPKINS MEDICAL SCHOOL

THE early days of the Johns Hopkins Medical School are now to be considered. The credit of seeing the importance of so uniting University and Hospital that both institutions might contribute to the cure of ailments, the advancement of science, and the training of physicians, is due to the founder and to those who acted with him in the beginning. Probably, among the most influential of these advisers were Francis T. King and Charles J. M. Gwinn. As I have already indicated Mr. King had what has been called "a hospitable mind." He was on the alert for good advice and for good advisers. He gathered from many fields. He knew the difference between wheat and chaff, and with almost automatic precision he threw aside the husks and stored the kernels found in every load of corn. With the instinct of an angler, he knew where to find and how to land the salmon and the trout. Before the ground was broken for the hospital he visited other infirmaries to observe their merits and their deficiencies. His knowledge and judgment commanded the confidence of his colleagues to such a degree that they gave him almost autocratic powers as President of the Hospital Board.

Mr. Gwinn was of a different cast. He was not lacking in enthusiasm nor in interest respecting the problems then under discussion, but his unusual ability as a lawyer made him cautious. He looked at both sides of every question, and when he gave an opinion, it was sure to be based on careful consideration of the *pros* and *cons*. As his mind was exact, his pen was ready, and he was constantly called upon to draft such instruments as required precision. I do not know, but

I suppose, that he wrote the will of Johns Hopkins, and that he was the author of a remarkable letter which stands as a sort of Bill of Rights among the fundamental provisions for the two foundations.

The site for the hospital was chosen by the founder. It was on high ground, from which the water ran off in every direction, free from objectionable neighbours, producers of smoke and noise, and (as I have heard Mr. King remark) not far from the manufacturing district of Canton where labouring people were prone to accidents. The next step was to determine the building plans. To facilitate a decision, five hospital experts, in different parts of the country, were invited to present their views in elaborate reports. They were not architects, but medical men who had been concerned in the conduct of hospitals. These reports were printed (with diagrams) in an octavo volume. Afterwards, with the aid of architects, the general plans were adopted, and gradually the details were worked out. In perfecting these plans and in directing the work of construction, one of the authors, Dr. John S. Billings, was the expert adviser of the Trustees. His great capacity for business, his acquaintance with hospital management during the Civil War, and his unwearying industry made him an invaluable counsellor; but the story of his services belongs to the Hospital, rather than to the University, and so I pass it by.

After the plans were adopted, the construction of the hospital proceeded slowly. Mr. King could not be hurried. Only the income of the endowment was employed. Year by year the opening of the wards was postponed. Meanwhile the University authorities were studying the problem of medical education, for it was fore-ordained that medicine and the allied sciences should be one of the principal cares of the University. Professor Huxley, then recognised as an able advocate of the study of nature, was invited to deliver an opening lecture, which was chiefly directed to medical edu-

cation. Dr. Martin's courses in biology were so arranged as to be of special service to prospective physicians. A preliminary medical course was announced. The nucleus of a medical Faculty was established. Inquiries were made as to suitable incumbents for the professorial chairs. Medical schools, at home and abroad, were visited. Everything was hopeful. Then unexpected disasters occurred. The investment which the founder had selected for the University ceased to yield its usual income, and then ceased to yield any income whatever. It was not until Miss Mary E. Garrett came forward, several years later, with a gift of nearly half a million dollars, supplementing a large contribution from friends of the medical education of women, that the organisation of the Medical School was perfected.

The first appointment on the Medical Faculty was Dr. William H. Welch. The medical profession generally recognised at that time the importance of bacteriology, and were desirous that the new School in Baltimore should include on its staff one who was eminent in the modern study of pathology. Inquiries as to such a person were made in this country, in England, and on the Continent, and, after a great deal of scrutiny, the choice fell upon the gentleman just named. He was persuaded to leave the post which he then filled in the Bellevue Medical College of New York, was allowed a year's leave of absence to further fit himself for his new work in the laboratories of Germany, and entered upon his duties in 1885. He was the first Dean of the Medical School, and, in all the developments of his plans, his learning, his good sense, and his enthusiasm were most helpful.

Looking forward to the future organisation of the Medical School, Dr. William Osler was appointed Professor of Medicine and Chief Physician to the Hospital; and with him were associated Dr. Halsted, in surgery, and Dr. Kelly, in gynæcology. When the time came to offer systematic instruction, these gentlemen formed a nucleus of the Medical

Faculty, and they added to their numbers Dr. Mall, in anatomy, Dr. Howell, in physiology, and Dr. Abel, in pharmacology, and, afterwards, many special associates and instructors.

At the beginning it was decided that those only who were already graduates in Arts or who had an equivalent training should be received as candidates for the degree of Doctor of Medicine. Most of the medical schools in the country received pupils with very slight examination, and even the foremost required nothing like the conditions of a baccalaureate degree. But it was not considered that a baccalaureate degree would be by itself a sufficient evidence of preliminary knowledge. It was therefore required that all such candidates should have pursued courses of instruction that included chemistry, physics, and biology, with some knowledge of French and German. By these conditions it was intended to bring together a superior class of persons who had made such progress in the line of their life work that their future success might be considered as assured. In other words, the medical instruction was to be based upon an acquaintance with the laws of normal and healthy life, and the candidates were to have sufficient knowledge of French and German, at least, to read the scientific papers constantly appearing in those languages.

The Medical School sprang at once into a position of great influence, as the Philosophical Department had already succeeded in its early days. The graduates of the School, after four years' training, were sought for in every part of the land, and are now to be found as instructors at Cambridge, on the Atlantic coast, and at San Francisco, on the Pacific, and in the best medical schools between those two extremes. In the Medical School, as well as in the Philosophical, the publication of memoirs was encouraged. The Hospital Reports now number eleven volumes; and the *Journal of Experimental Medicine* begun here in 1896 and now published in New York, has reached its seventh volume.



RESIGNATION

A Farewell Address after Twenty-five Years' Service

RETIREMENT AFTER TWENTY-FIVE YEARS' SERVICE

After twenty-five years' service, having reached the age of seventy years, I requested to be released from the office of President of the Johns Hopkins University, which I had held since 1875. My colleague during all that period, Dr. Ira Remsen, Professor of Chemistry, was elected to the vacant chair, and was formally inducted into his office on the 22d of February, 1902. The celebration lasted during two days, and has been fully recorded in the volume published by the University.

IX

RESIGNATION: A FAREWELL ADDRESS, FEBRUARY 22, 1902

THIS occasion is too important, the audience too varied, the visitors too many and too distinguished, to warrant the employment of the time allotted to me in personal reminiscences and local congratulations. We are rather bound to consider some of the grave problems of education which have engaged, during a quarter of a century, the study of able and learned men, and have led to the development, in this country, of the idea of the University. This period has seen marvellous improvements in higher education, and although, in the history of intellectual development, the nineteenth century may not be as significant as the thirteenth, when modern universities came into being at Bologna, Paris, and Oxford, yet we have lived at a time when forces have been set to work of the highest significance. Libraries, seminaries and laboratories have been enlarged and established in every part of the land.

Let us go back to the year 1876, that year of jubilee, when the centennial celebration in Philadelphia brought together, in open concord, States and people separated by dissension and war. Representatives from every part of the land assembled in the City of Brotherly Love to commemorate the growth of a century. The triumph of liberal and industrial arts, the progress of architecture, sculpture, and painting, were interpreted by the music of our Sidney Lanier. The year was certainly propitious. So was the place. Maryland was a central State, and Baltimore a midway station between the North and the South. The people had been divided by the war, but there were no battle fields in our

neighbourhood to keep in mind the strife of brethren. The State of Maryland had been devoted to the idea of higher education ever since an enthusiast in the earliest colonial days projected the establishment of a university on an island in the Susquehanna. Liberal charters had been granted to colleges, of which St. John's, the successor of the first free school, must have honourable mention, a college likely to be increasingly useful during the twentieth century. The University of Maryland, with scanty resources, encouraged professional training in law, medicine, and the liberal arts (nominally also, in theology), but its efforts were restricted by the lack of funds. Nathan R. Smith, David Hoffman and other men of eminence were in the faculty. The Catholic Church had established within the borders of the State a large number of important schools of learning. One of them, St. Mary's College, under the cultivated fathers of St. Sulpice, had been the training place of some of the original promoters of the Johns Hopkins University. Yet there was nothing within the region between Philadelphia and Charlottesville, between the Chesapeake and the Ohio, which embodied, in 1876, the idea of a true university. Thus it appears that the time, the place and the circumstances, were favourable to an endowment which seemed to be extraordinarily large, for the munificence of Rockefeller, Stanford and Carnegie could not be foreseen.

The founder made no effort to unfold a plan. He simply used one word,—University,—and he left it to his successors to declare its meaning in the light of the past, in the hope of the future. There is no indication that he was interested in one branch of knowledge more than in another. He had no educational "fad." There is no evidence that he had read the writings of Cardinal Newman or of Mark Pattison, and none that the great parliamentary reports had come under his eye. He was a large-minded man, who knew that the success of the foundation would depend upon the

wisdom of those to whom its development was entrusted; and the Trustees were large-minded men who knew that their efforts must be guided by the learning, the experience, and the devotion of the Faculty. There was a natural desire, in this locality, that the principal positions should be filled by men with whom the community was acquainted, but the Trustees were not governed by an aspiration so provincial. They sought the best men that could be found, without regard to the places where they were born, or the colleges where they had been educated. So, on Washington's birthday, in 1876, after words of benediction from the President of Harvard University, our early counsellor and our constant friend, the plans of this University were publicly announced in the President's inaugural speech.

As I cast my thoughts backwards, memories of the good and great who have been members of our society rise vividly before me—benefactors who have aided us by generous gifts, in emergencies and in prosperity; faithful guardians of the trust; illustrious teachers; and brilliant scholars who have proceeded to posts of usefulness and honour, now and then in Japan, in India, in Canada, but most of them in our own land, from Harvard to the Golden Gate.

I must not linger, but lead you on to broader themes. May I venture to assume that we are an assembly of idealists. As such I speak; as such you listen. We are also practical men. As such, we apply ourselves to useful purposes, and to our actions we apply the test of common sense. Are our aims high enough? are they too high? are our methods justified by experience? are they approved by the judgment of our peers; can we see any results from the labours of five and twenty years? can we justify a vigorous appeal for enlargement? These and kindred questions press themselves for consideration on this memorial day. But in trying to answer them, let us never lose sight of the ideal,—let us care infinitely more for the future than we do for the past. Let us

compare our work with what is done elsewhere and with what might be done in Baltimore. In place of pride and satisfaction, or of regret that our plans have been impeded, let us rejoice that the prospects are so encouraging, that the opportunities of yesterday will be surpassed to-morrow.

If it be true that "the uses of adversity" are sweet,—adversity that "wears yet a precious jewel in his head,"—let us look forward to leaving our restricted site for a permanent home where our academic life will be "exempt from public haunt," where we shall "find tongues in trees, books in the running brooks, sermons in stones, and good in everything." In faith and hope and gratitude, I have a vision of Homewood, where one person and another will build the structures of which we stand in so much need,—where scholarship will have its quiet retreat, where experimental science will be removed from the jar of the city street, where health and vigour will be promoted by athletic sports in the groves of Academus. The promised land which Moses sees from Pisgah, our Joshua will possess.

At the close of the Civil War came the opportunity of Baltimore. It led to an extraordinary and undesigned fulfilment of an aspiration of George Washington. As his exact language is not often quoted, I venture to give it here. In his last will and testament, after expressing his ardent desire that local attachments and State prejudices should disappear, he uses the following words:

> Looking anxiously forward to the accomplishment of so desirable an object as this is (in my estimation), my mind has not been able to contemplate any plan more likely to effect the measure, than the establishment of a University *in the central part of the United States,* to which the youths of fortune and talents from all parts thereof may be sent for the completion of their education, in all the branches of polite literature, in arts and sciences, in acquiring knowledge in the principles of politics and good government, and, as a matter of infinite importance in my judgment, by associating with each other, and forming friendships in juvenile years, be enabled to

free themselves in a proper degree from those local prejudices and habitual jealousies which have just been mentioned, and which, when carried to excess, are never-failing sources of disquietude to the public mind, and pregnant of mischievous consequences to this country.

You will please to notice that he did not speak of a university in Washington, but of a university "in the central part of the United States." What is now the central part of the United States? Is it Chicago or is it Baltimore?

Let me now proceed to indicate the conditions which existed in this country when our work was projected. You will see that extraordinary advances have been made. The munificent endowments of Mr. John D. Rockefeller and of Mr. and Mrs. Leland Stanford, the splendid generosity of the State legislatures in Michigan, Wisconsin, Minnesota, California, and other Western States, the enlarged resources of Harvard, Yale, Columbia, Princeton, Pennsylvania and other well established universities, and now the unique and unsurpassed generosity of Mr. Carnegie, have entirely changed the aspects of liberal education and of scientific investigation.

As religion, the relation of finite man to the Infinite, is the most important of all human concerns, I begin by a brief reference to the attitude of universities toward Faith and Knowledge. The earliest universities of Europe were either founded by the church or by the state. Whatever their origin, they were under the control, to a large extent, of ecclesiastical authorities. These traditions came to our country, and the original colleges were founded by learned and godly men, most of them, if not all, ministers of the gospel. Later, came the State universities and later still, the private foundations like that in which we are concerned. Gradually, among the Protestants, laymen have come to hold the chief positions of authority formerly held by the clergy. The official control, however, is less interesting at this moment

than the attitude of universities toward the advancement of knowledge. To-day, happily, apprehensions are not felt, to any great extent, respecting the advancement of science. It is more and more clearly seen that the interpretation of the laws by which the universe is governed, extending from the invisible rays of the celestial world to the most minute manifestations of organic life, reveal one plan, one purpose, one supreme sovereignty—far transcending the highest conceptions to which the human mind can attain respecting this sovereign and infinite Power. Sectarian supremacy and theological differences have dwindled therefore to insignificance, in institutions where the supreme desire is to understand the world in which we are placed, and to develop the ablest intellects of each generation, subservient to the primeval injunction "replenish the earth and subdue it; and have dominion over the fish of the sea, and over the fowl of the air, and over every living thing that moveth upon the earth." Notwithstanding these words, the new biology, that is the study of living creatures, encountered peculiar prejudices and oppositions. It was the old story over again. Geology, early in the century, had been violently attacked; astronomy, in previous centuries, met its bitter opponents; higher criticism is now dreaded. Yet quickly and patiently the investigator has prosecuted and will continue his search for the truth,—heedless of consequences, assured by the Master's words, "the truth shall make you free."

Still the work goes on. Science is recognised as the handmaid of religion. Evolution is regarded by many theologians as confirming the strictest doctrines of predestination. The propositions which were so objectionable thirty years ago are now received with as little alarm as the propositions of Euclid. There are mathematicians who do not regard the Euclidean geometry as the best mode of presenting certain mathematical truths, and there are also naturalists who will not accept the doctrines of Darwin, without limitation or

modification, but nobody thinks of fighting over the utterances of either of these philosophers. In fact, I think it one of the most encouraging signs of our times that devout men, devoted to scientific study, see no conflict between their religious faith and their scientific knowledge. Is it not true that as the realm of Knowledge extends, the reign of Faith, though restricted, remains? Is it not true that science today is as far from demonstrating certain great propositions, which in the depths of our souls we all believe, as it was in the days of the Greek philosophers? This university, at the outset, assumed the position of a fearless and determined investigator of nature. It carried on its work with quiet, reverent, and unobtrusive recognition of the immanence of divine power,—of the Majesty, Dominion, and Might, known to men by many names, revered by us in the words that we learned from our mothers' lips, Almighty God, the Father Everlasting.

Another danger, thirty years ago, was that of conflict between the advocates of classical and scientific study. For many centuries Greek and Latin were supreme in the faculty of liberal arts, enforced and strengthened by metaphysics and mathematics. During the last half century, physical and natural sciences have claimed an equal rank. The promotion has not been yielded without a struggle, but it is pleasant to remember that in this place no conflict has arisen. Among us, one degree, that of Bachelor of Arts, is given alike to the students of the Humanities and the students of Nature, and the degree of Doctor of Philosophy may be won by advanced work in the most remote languages of the past or in the most recent developments of biology and physics. Two illustrious teachers were the oldest members of the original faculty;—one of them universally recognised as among the foremost geometricians of all the world,—the other renowned for his acquaintance with the masters of thought in many tongues, and especially for his appreciation of the writers of

ancient Greece, upon whose example all modern literature is based.

Our fathers spoke of "church and state," and we but repeat their ideas when we say that universities are the promoters of pure religion and wise government. This university has not been identified with political partisanship,—though, its members, like all patriots, have held and expressed their opinions upon current questions, local and national. Never have the political views of any teacher helped or hindered his preferment; nor have I any idea what would be the result of the party classification of our staff. This, however, may be claimed. The study of politics, in the sense of Freeman, "History is past politics, and politics present history," has been diligently promoted. The principles of Roman law, international arbitration, jurisprudence, economics and institutional history have here been set forth and inculcated, so that in every part of the land we can point to our graduates as the wise interpreters of political history, the strong promoters of democratic institutions, the firm believers in the merit system of appointments, and in local self-government.

A phrase which has lately been in vogue is original research. Like all other new terms, it is often misapplied, often misunderstood. It may be the highest occupation of the human mind. It may be the most insignificant. A few words may therefore be requisite to explain our acceptance of this word. When this university began, it was a common complaint, still uttered in many places, that the ablest teachers were absorbed in routine and were forced to spend their strength in the discipline of tyros, so that they had no time for carrying forward their studies or for adding to human knowledge. Here the position was taken at the outset that the chief professors should have ample time to carry on the higher work for which they have shown themselves qualified, and also that younger men, as they gave evidence of uncommon qualities, should likewise be encouraged to devote them-

selves to study. Even those who were candidates for degrees were taught what was meant by profitable investigation. They were shown how to discover the limits of the known; how to extend, even by minute accretions, the realm of knowledge; how to co-operate with other men in the prosecution of inquiry; and how to record in exact language, and on the printed page, the results attained. Investigation has thus been among us the duty of every leading professor, and he has been the guide and inspirer of fellows and pupils, whose work may not bear his name, but whose results are truly products of the inspiration and guidance which he has freely bestowed.

The complaint was often heard, in the early seventies, that no provision was made in this country for post-graduate work except in the three professional schools. Accordingly, a system of fellowships, of scholarships, and of other provisions for advanced study was established here, so well adapted to the wants of the country at that time that its provisions have been widely copied in other places. It now seems as if there was danger of rivalry in the solicitation of students, which is certainly unworthy, and there is danger also that too many men will receive stipendiary encouragement to prepare themselves for positions they can never attain. In the early days of the French Academy when a seat in that body was a very great prize, a certain young man was told to wait until he was older, and the remark was added that in order to secure good speed from horses, a basket of oats should always be tied to the front of the carriage pole as a constant incitement. It would indeed be a misfortune if a system of fellowships should be open to this objection. Nevertheless, whoever scans our register of Fellows will discover that many of the ablest men in the country, of the younger generation, have here received encouragement and aid.

When this university began, the opportunities for scientific publication in this country were very meagre. The

American Journal of Science was the chief repository for short and current papers. The memoirs of a few learned societies came out at slow intervals and could not be freely opened to investigators. This university, in the face of obvious objection, determined to establish certain journals which might be the means of communication between the scholars of this country and those abroad. Three journals were soon commenced: The *American Journal of Mathematics;* the *American Journal of Philology;* the *American Chemical Journal.* Remember that these were "American" journals, in fact as well as in name, open to all the scholars of the country. Other periodicals came afterward, devoted to History and Politics, to Biology, to Modern Languages, to Experimental Medicine and to Anatomy. Moderate appropriations were made to foreign journals of great importance which lacked support, the English *Journal of Physiology* and the German *Journal of Assyriology.* Nor were the appropriations of the Trustees restricted to periodical literature. Generous encouragement was given to the publication of important treatises, like the researches of Dr. Brooks upon Salpa: to the physiological papers of Dr. Martin; to the studies in logic of Mr. Peirce and his followers; to Professor Rowland's magnificent photographs of the solar spectrum; to the printing of a facsimile of the earliest Christian document after the times of the Apostles; and recently, with the co-operation of the University of Tübingen, to the exact reproduction by Dr. Bloomfield of a unique manuscript which has an important bearing upon comparative philology.

I am not without apprehensions that our example to the country has been infelicitous, not less than thirty institutions being known to me which are now engaged in the work of publication. The consequence is that it is almost impossible for scholars to find out and make use of many important memoirs which are thus hidden away. One of the problems

for the next generation to solve is the proper mode of encouraging the publication of scientific treatises.

I cannot enumerate the works of scholarship which have been published without the aid of the university by those connected with it,—studies in Greek syntax, in mathematics, in history, in chemistry, in biology, in medicine, in economics, in pathology and in many other branches. The administration now closing can have no monument more enduring than the great mass of contributions to knowledge, which are gathered (like the cairn of boulders and pebbles which commemorates in Cracow the burial place of Kosciusko), a bibliothecal cairn, in the office of the Trustees, to remind every officer and every visitor of our productivity in science and letters.

There are many who believe that the noblest work in which we have engaged is the advancement of medical education and science. Several agencies have been favourable. The munificence of the founder established a hospital, which was recognised as soon as it was opened as the foremost of its kind in Christendom. He directed that when completed it should be a part of the University and, accordingly, when the time came for organising a medical and surgical staff, the principal professors were simultaneously appointed to the chairs of one institution, and the clinics of the other. They were to be constantly exercised in the relief of suffering and in the education of youth. For the lack of the requisite funds, the University at first provided only for instruction in those scientific branches which underlie the science of medicine. At length, the organisation of the school of medicine was made possible by a very large gift of money, received from a lady of Baltimore, who was familiar with the requirements of medical science, and eager to see that they were met. By her munificence the University was enabled to organise and maintain that great department which now reflects so much honour upon this city, and which does so much by example,

by publication, by systematic instruction, and by investigation to carry forward those varied sciences, anatomy, physiology, physiological chemistry, pharmacy, pathology, and the various branches of medicine and surgery. In accordance with the plans of the University, the generous donor made it a condition of her gift that candidates for the degree of Doctor of Medicine should be those only who had taken a baccalaureate degree based upon a prolonged study of science and the modern languages. A four years' course of study was also prescribed and women were admitted to the classes upon the same terms as men. The liberal and antecedent aid of women throughout the country in the promotion of these plans is commemorated by a building inscribed "the Women's Fund Memorial Building." The excellent laboratory facilities, the clinical opportunities, the organisation of a training school for nurses, and especially the ability of the physicians and surgeons, have excited abundant emulation and imitation in other parts of the country,—a wonderful gain to humanity. It is more and more apparent among us that a medical school should be a part of a university and closely affiliated with a hospital. It is also obvious that the right kind of preliminary training should be antecedent to medical studies.

I must ask the indulgence of our friends from a distance as I now dwell, for a moment, on the efforts which have been made to identify the Johns Hopkins University with the welfare of the city of Baltimore and the State of Maryland. Such a hospital and such medical advisers as I have referred to are not the only benefits of our foundation. The journals, which carry the name of Baltimore to every learned society in the world are a minor but serviceable advantage. The promotion of sanitary reform is noteworthy, the study of taxation and in general of municipal conditions, the purification of the local supply of water, the advancement of public education by courses of instruction offered to teachers, dili-

gent attention to the duties of charity and philanthropy, these are among the services which the faculty have rendered to the city of their homes. Their efforts are not restricted to the city. A prolonged scientific study of the oyster, its life history, and the influences which help or hinder its production, is a valuable contribution. The establishment of a meteorological service throughout the State in connection with the Weather Bureau of the United States is also important. Not less so is the Geological Survey of Maryland, organised with the co-operation of the United States Geological Survey, to promote a knowledge of the physical resources of the State, exact maps, the improvement of highways, and the study of water supplies, of conditions favourable to agriculture, and of deposits of mineral wealth within this region. To the efficiency of these agencies it is no doubt due that the State of Maryland has twice contributed to the general fund of the university.

Nor have our studies been merely local. The biological laboratory, the first establishment of its kind in this country, has carried forward for many years the study of marine life at various points on the Atlantic and has published many important memoirs, while it has trained many able investigators now at work in every part of the land. Experimental psychology was here introduced. Bacteriology early found a home among us. The contributions to chemistry have been numerous and important. Here was the cradle of saccharine, that wisely diffused and invaluable concentration of sweetness, whose manufacturers unfortunately do not acknowledge the source to which it is due. In the physical laboratory, light has been thrown upon three fundamental subjects: the mechanical equivalent of heat, the exact value of the standard ohm, and the elucidation of the nature of the solar spectrum. For many years this place was the chief seat in this country for pure and advanced mathematics. The study of languages and literature, Oriental, classical, and

modern, has been assiduously promoted. Where has the Bible received more attention than is given to it in our Semitic department? where the study of ancient civilisation in Mesopotamia, Egypt, and Palestine? where did the Romance languages, in their philological aspect, first receive attention? To American and institutional history persistent study has been given. Of noteworthy significance also are the theses required of those who are admitted to the degree of Doctor of Philosophy, which must be printed before the candidate is entitled to all the honours of the degree.

I might enlarge this category, but I will refrain. The time allotted to me is gone. Yet I cannot sit down without bringing to your minds the memories of those who have been with us and have gone out from us to be seen no more: Sylvester, that profound thinker devoted to abstractions, the illustrious geometer, whose seven prolific years were spent among us and who gave an impulse to mathematical researches in every part of this country; Morris, the Oxford graduate, the well-trained classicist, devout, learned, enthusiastic, and helpful, most of all in the education of the young; accomplished Martin, who brought to this country new methods of physiological inquiry, led the way in the elucidation of many problems of profound importance, and trained up those who have carried his methods to every part of the land; Adams, suggestive, industrious, inspiring, versatile, beneficent, who promoted, as none had done before, systematic studies of the civil, ecclesiastical, and educational resources of this country; and Rowland, cut down like Adams in his prime, honoured in every land, peer of the greatest physicists of our day, never to be forgotten in the history of physical science. I remind you also of the early student of mathematics, Thomas Craig, and of George Huntington Williams, the geologist, whose memory is cherished with admiration and love. Nor do I forget those who have here been trained to become leaders in their various

departments throughout the country. One must be named, who has gone from their number, Keeler, the gifted astronomer, who died as the chief of the Lick Observatory in California, whose contributions to astronomical science place him among the foremost investigators of our day; and another, the martyr Lazear, who, in order that the pestilence of yellow fever might be subdued, gave up his life for humanity.

> Like clouds that rake the mountain summit,
> Or waves that own no curbing hand,
> How fast has brother followed brother
> From sunshine to the sunless land.

It is sad to recall these interrupted careers. It is delightful to remember the elevated character of those I have named, and delightful to think of hundreds who have been with us, carriers to distant parts of our country and to other lands of the seeds which they gathered in our gardens of science. It is delightful to live in this age of bounty; it is delightful to know that the citizens of Baltimore who in former years have supplemented the gifts of the founder by more than a million of dollars have come forward to support a new administration with the gift of a site of unsurpassed beauty and fitness. A new day dawns. "It is always Morning somewhere in the world."





REMEMBRANCE;

Looking Backwards Over Fifty Years

LOOKING BACKWARDS OVER FIFTY YEARS

At the Semi-Centennial of the University of Wisconsin, celebrated in Madison in October, 1904, I was requested to make a general review of the progress of University Education during the period covered by the history of that admirable institution, the Child of the State. Here is the substance of what was said at that time.

X

REMEMBRANCES—LOOKING BACKWARDS OVER FIFTY YEARS

THE story of the University of Wisconsin, as it has been recorded during this celebration, is an impressive illustration of the progress of American society during half a century. It has brought to mind a long list of presidents, from John H. Lathrop and Henry Barnard to Charles Kendall Adams and C. R. Van Hise and another now present, Dr. Chamberlin, men who have had the sagacity to perceive the needs of this nascent state, and the skill to secure for it the intellectual and financial resources requisite for the foundation of a strong university. It has also called to our grateful remembrance other citizens of this State,—legislators, statesmen, speakers, writers, givers,—who have supported the university in its hours of trial and perplexity, and have contributed to its growth and prosperity. The task of the pioneers has not been easy. No doubt each of them could say as Sven Hedin said after a journey of six thousand miles through the dry interior of a continent: "Travel in Asia is not a dance on the dropping petals of the rose." To found and develop a university in a State just emerging from the wilderness may seem to the young who look back upon the record, a romantic and chivalric enterprise, like the search for the Holy Grail; but to those who took part in the work, there were hours of weariness, discouragement, and peril. The greater the task, the greater the victory, and the heartier the congratulations which this concourse of scholars bestows upon the University of Wisconsin at the close of its first half century. I bring you officially the cordial greetings of the American Association for the Advancement of Sci-

ence and of your youngest ally, the Carnegie Institution of Washington.

The brief period allotted me for this discourse is mortgaged to the past. I am expected to "look backward." Doubtless the honour of presenting such a theme is due to the fact that I am a veteran of fifty years' standing, who has taken part in many an academic discussion and witnessed many a contest; who has seen a school of science grafted upon one of the oldest and most conservative of classical colleges; who has helped to rescue a State university from the limitations of a college of agriculture and enlarge it to meet the requirements of a magnificent commonwealth; who has watched over the infancy of an institution planned to provide advanced opportunities for American youth akin to those which are offered in the best of foreign universities; and, finally, who has seen a munificent fund set apart for the encouragement of investigation and the pursuit of knowledge without the restrictions of a school or college. Pardon these personal allusions, which are made to justify the course of these remarks. The concrete experiences upon which they are based may be designated, in the parlance of the day, as "original researches" in the field of American education. They involve observation and experiment.

In order that complete justice may be done to the University of Wisconsin, we must look beyond the boundaries of the State and note the progress made elsewhere. As I view the last half century, it is not the introduction of epoch-making inventions which impresses me most deeply; it is not the marvellous products of the earth,—in oil, in metals, and in crops; it is not the rediscovery of dead cities,—Thebes, Babylon, and Troy,—nor the opening of China and Japan; it is not the catalogue of great men, statesmen, soldiers, explorers, poets, musicians, investigators,—the intellectual forces of the nineteenth century; it is not great political changes like the emancipation of slaves and serfs, the unifi-

cation of nations, and the extension of imperial sway coincident with the progress of democratic rule; it is not the growth of great cities; it is not even the establishment of The Hague tribunal and the development of the principle of arbitration. All this has occurred since the foundation of this university, and it is wonderful indeed. But there are other changes more impressive than those enumerated; more impressive because more fundamental and consequently less obvious; more pervasive, more suggestive, more enduring.

Few persons will deny the assertion that the most remarkable changes in the last half century are due to the growth of science and the spread of the scientific spirit.

I make the distinction purposely, because knowledge might be increased in the cave or cloister, by hermit or monk, by the hidden efforts of some genius like Newton or Leibnitz or Darwin or Helmholtz; while in the same period the love of science might be smothered, as it was in the Dark Ages, by arbitrary restrictions of church or state, or it might be blighted in the bud because of popular ignorance. Science might grow under any circumstances, but the spirit of science will only spread among free and enlightened people. Its advance during recent decades is too familiar a theme for amplification at this time, especially as at the close of the nineteenth century the press teemed with reviews of its progress. Text-books, compendiums, encyclopædias, place the results within the reach of everyone. All can learn, if they will, what man has found out.

On the other hand, the scientific spirit cannot thus be measured nor stated in compilations. It is perpetually active. It is the search for truth,—questioning, doubting, verifying, sifting, testing, proving, that which has been handed down; observing, weighing, measuring, comparing the phenomena of nature, open and recondite. In such researches, a degree of accuracy is nowadays reached which was impossible before the lens, the balance, and the metre, those marvellous in-

struments of precision, had attained their modern perfection. Wherever we look, we may find indications of the scientific spirit. The search after origins and the grounds of belief, the love of natural history, the establishment of laboratories, the perfection of scientific apparatus, the formation of scientific associations, and the employment of scientific methods in history, politics, economics, philology, psychology, are examples of the trend of intellectual activity. The readiness of the general government and of many State legislatures to encourage surveys and bureaus, the establishment of museums of natural history, and the support of explorations illustrate this tendency. Even theology feels the influence. The ancient and sacred proverb has been rediscovered,—the letter killeth and the spirit maketh alive. I will go only to the edge of this disputed territory and shelter my own opinions behind those of a learned and devout prelate of the English Church (Bishop Westcott), whose words are these: "No one can believe more firmly than I do that we are living in a time of revelation, and that the teachings of physical science are to be for us what Greek literature was in the twelfth century." Contrast this assertion with that of Andover when a famous scholar insisted that the heavens and earth were made in six days of twenty-four hours; and when the college pulpit in New Haven advocated the same doctrine,—and this within the remembrance of your speaker.

Fifty years ago, the word science in a discourse like this would be restricted to physical and natural science. Mathematics would perhaps be admitted into the sacred circle. It was not uncommon to hear that "a professor of science" was wanted, by which it was meant that someone was wanted who could teach natural history, chemistry, geology, and physics. Now the word science is properly, I wish we could say generally, used as equivalent to exact knowledge, classified, compared, recorded, and made public. Consequently we hear of the sciences of language, archæology, history,

economics, politics, music, as well as of theology, comparative religion, ethics, diplomacy, administration, and of manifold departments of medicine. Men used to speak of science as if it were caviare, relished only by exceptional tastes. A scientific man was dry as dust. He was laughed at and perhaps despised by the business man who wondered why such devotion was not directed to "something practical," something useful. Members of legislative bodies did not hesitate to say that they favoured "practical" appropriations, but that the government could do nothing for science. All this has changed. Great departments in Washington, like those of agriculture, geology, natural history, geodesy, astronomy, ethnology, promote abstract as well as applied science. Not a few of the separate States act in a kindred spirit. The pulpit, no longer speaking of science in derogatory tones, is almost ready to say that science is the handmaid of religion. The most widely circulated newspapers and other periodicals have scientific articles. Nature books are a new branch of bibliography. All this, in the last analysis, indicates a desire on the part of all thoughtful men among the public at large, to ascertain the truth,—to employ such agencies as will eliminate error, get rid of misapprehensions and unfounded traditions, and verify assertions. It means the promotion of accuracy not only in weighing and measuring, but likewise in thinking, in speaking, and in writing. Emancipation from the slavery of superstition and unverified traditions follows as a matter of course. I have held in my hand a coin, supposed to be silver, which was once circulated in China and received innumerable stamps upon its face, as endorsement of its value, when the token passed from hand to hand. At length a harder blow struck through the face and revealed the fact that the coin was not of silver, but of some base metal plated to look like silver. In like manner many a well endorsed tenet has yielded to the hammer of truth.

Fifty years ago (more in England than in this country),

there was an endeavour to provoke a discussion between the lovers of science and the lovers of literature. Technical vocations were spoken of with contempt as "bread and butter studies." Inferior degrees were conferred upon those who pursued a modern curriculum in place of "the regular course." Not only has the spirit of accuracy been developed during the last decades, but the volume of established science has been enormously augmented. Let anyone compare the ascertained knowledge accumulated in any field with that which was found in the same field fifty years ago, by a comparison of text-books, treaties, and encyclopædias, and he will see what wealth has been accumulated.

With the growth of the scientific spirit grows the love of truth, and with the love of truth in the abstract comes the love of accuracy in the concrete. If any man of science should change an iota of what he believed to be true, if he should say more or less to serve a purpose, he would deserve a place in the penitentiary of science and he probably would find it. It is even reasonable to expect that truth-telling will become as universal as the sway of science,—truth-telling even in letters of recommendation for official appointment and in the acknowledgment of books received by favour of the publishers.

Closely connected with the spread of the scientific spirit has been the enunciation and the acceptance of the doctrine of evolution. Its conception was remote. Its birth was timidly announced. Its childhood was almost crushed by unkind treatment. Its adoption was slowly secured. At length, as an interpreter of the order of nature and of the progress of mankind, its authority is acknowledged, its triumph complete, and the prediction is boldly made, by one of the foremost exponents, that the doctrine will probably take its place, in the opinion of future generations, as the crowning achievement of the nineteenth century. Whether this be so or not, or whether some other principle,—the con-

servation of force for example, or the relation of electricity to light, or radio-activity,—is destined to such pre-eminence, the world is not likely to forget how an idea dimly perceived by the earliest Greek philosophers, repeated by the Roman poet, dormant during the long period of the middle ages and renaissance, has been distinctly formulated and carefully elaborated by the generation just passing from the stage. How like the bloom of the century plant, which, long kept back, suddenly bursts forth to the delight of every eye! It is both encouraging and discouraging to consider the slow processes by which truths are clearly formulated and generally accepted. With our human chronology let us contrast the divine, and remember that to the all-seeing Eye a thousand years are but as yesterday.

The study of evolution coincides with the introduction of biology, or the study of the origin and morphology of every kind of living organism. Natural history assumed a new form under the name of biology, and biology has been subdivided so that even the word itself is passing into disfavour as the distinctive epithet of a single science. The richest fruits of biological study are to be seen in the science of medicine. Indeed, the growth of medical science, promoted by the discovery of anæsthesia and antisepsis, is perhaps the greatest boon, of a concrete and practical nature, that the world has ever received. The presidential discourse, to which we listened yesterday, dwelt so forcibly on this theme, that I forego the pleasure of rehearsing the victory which science has won over pestilence and disease within the last two or three decades. One by one the ravages of cholera, diphtheria, yellow fever, and the plague have been checked. Tuberculosis begins to yield its direful grasp and the spread of malarial fever is controlled. The words of Dr. Osler, a great authority, are these:

"The study of physiology and pathology, within the past half century, has done more to emancipate medicine from

routine and the thraldom of authority, than all the work of all the physicians from Hippocrates to Jenner,—and we are yet but on the threshold."

The growth of American universities must arrest the attention of all who look back over the last half century. Throughout the civilised world the changes have been very great, due especially to the introduction of laboratory methods in chemistry by the great teacher Liebig, and subsequently in physics and biology by other men of genius. The perfection of astronomical instruments and of the microscope has had a similar influence. Exact surveys of the natural resources of civilised countries, and explorations in uncivilised lands, have opened the way to advances in geology and natural history. In the middle of the last century Americans perceived the scholarly leadership of Germany and sent scores of her brightest minds to Göttingen, Leipsic, Munich, and Berlin. The natural sciences attracted minds of a different order, and Gibbs, Gould, Rood, and many still living found places in the well-equipped and well-manned laboratories of the Continent. The followers of Æsculapius, true to the traditions of Epidaurus and Salerno, worshipped in the shrines of Paris and Vienna. England perceived the necessity of enlarging and supplementing her ancient universities,—sources of our earliest academic traditions,—and the parliamentary commissions on university reorganisation and on technical instruction prepared the way for great advances, both in classical studies and in modern science. America felt these influences and profited by them.

Within the period that we are considering our countrymen have come to recognise the true significance of university work, as distinguished from collegiate discipline, and instruction has been provided in many departments of science and letters, quite apart from the courses of professional schools, and more advanced than those of the college. There

are fifteen or twenty places in this country at the present time where ample endowments enable the authorities to develop laboratories and seminaries for the guidance of graduate students. Simultaneously with this development there has been in many places a complete reorganisation of collegiate work. While its disciplinary character is maintained, very many subjects of study are allowed in the college curriculum, and consequently a great deal of freedom of choice is permitted. It does not appear that the undergraduates receive better instruction than they received in the earlier days; it does not appear that the bachelors of to-day are better qualified for life than they were in the early part of the last century; but it is obvious that the manifold requirements of modern society have been advantageously met by courses of instruction which lead up to the modern pursuits, as the old classical curriculum led naturally to the study of law and theology. Two gains are doubtless permanent; first, elective courses or the choice between "groups" of undergraduate studies; and, second, the rapidly increasing recognition of the value of "liberal education," as antecedent to higher and special studies and as a generous and enviable preparation for the duties of a business life. Closely connected with the growth of universities, libraries and laboratories, well equipped and well manned, have rapidly been developed.

In the college fields there is still an ample place for the maintenance of religious influence, and for the giving of such religious instruction as accords with the views of those who support the establishments. But the university fields, with one noteworthy exception, are free from ecclesiastical influences, although voluntary attendance upon religious meetings is encouraged, and, through the Christian associations and other agencies, religious life is promoted.

The higher education of any country depends upon the lower. Consequently it is a matter of great satisfaction to

observe that during the last half century public schools have been introduced in every State of the Union, and that the education of the people in primary and secondary schools is everywhere provided for. The great problem what to do for the negro race still exercises the minds of wise and thoughtful people.

Now comes this cry for research. It is not a felicitous term. It has no exact equivalent in other tongues. It would be better if we could employ the more cumbrous phrase, advancement and diffusion of knowledge, as Smithson said; or of learning, as Lord Bacon said. But no serious harm is done so long as it is understood that we are not re-searching,—that is, searching again, like the thrifty housekeeper, for a pearl that has been lost,—but are endeavouring to add new truths to the stores that mankind has accumulated during the slow process of historic development. Many young scholars are misled by the charm of a word,—it is to them like "Mesopotamia,"—and when they say that research is to be their vocation, without having in mind any inquiry that they wish to follow, it is best to advise them to search the Scriptures until they know what fields are well tilled, what harvests already garnered. Nevertheless, with one voice, the intellectual world must joyfully acknowledge that the provision of munificent funds for the assistance of scientific inquiry, by many wise and munificent benefactors, and the willingness of universities to allow large freedom for investigation to those who are qualified, are among the finest fruits of American culture. Investigation is the watchword of the twentieth century, cried upon the towers of every university,—investigation not iconoclastic and destructive, leading to the spread of agnosticism and intellectual anarchy, but constructive, up-building, invigorating, cherishing all that man has learned from nature and from his own experience, while removing the incrustations imposed by ignorance and bigotry. Back of all that man has learned are the

fields which knowledge has not penetrated, and as to which the voice of humanity can only utter *Credo.*

There are still other topics upon which I am prepared to comment, but the time does not permit. I will simply mention them. The provision of higher educational advantages for women is a very great advance in modern civilisation. The contributions they are making to historical, philosophical, and biological sciences exhibit a high degree of excellence. The establishment of scientific periodicals, containing the original contributions of American investigators, indicates the inquisitiveness and the fertility of our scholars, —but unfortunately the note of jealousy and rivalry reveals the fact that the most highly educated persons in this country are not exempt from the infirmities of human nature. Increased attention to physical culture and to the laws of hygiene has rescued students, both men and women, from the looks, the habits, and the ailments which were formerly regarded as characteristic of those who cultivated their intellects. Stooping shoulders and sallow faces are no longer in vogue. Some intelligent observers from England have lately expressed the apprehension that we are developing a feminine species of man, as other observers have suggested that a masculine variety of women will be the fruit of co-education. The answer to the first of these suggestions is found in the vigour with which all manly sports are carried on, and in the endurance and bravery shown by young Americans when circumstances call them to the front. The answer to the other apprehension is found in the matrimonial statistics which are published from time to time.

Within the period we are considering, many new subjects have been brought into the academic schedules, an important example being the modern languages. A liberal education is not now complete unless it includes a knowledge of French and German. Much attention is given to Anglo-Saxon and early English; but it is not evident that the powers of ex-

pression, by pen and voice, are as well developed as they were in the days of "composition," and "declamation," when debating societies like those of Yale College "Linonia" and the "Brothers in Unity," afforded abundant and attractive opportunities for the presentation of essays and the delivery of speeches. We are in danger of losing the elements of repose, the quiet pursuit of knowledge, the friendship of books, the pleasures of conversation, and the advantages of solitude. It is stimulating to a company of students to have among them Kelvin, Brunetière, Ehrlich, Jebb, and others of the most illustrious scholars of our times; but it is not well to drink too freely of intellectual champagne. The early deaths of Walker, Pepper, Goode, Rowland, and Adams should be a warning that the strenuous life may be very useful, but it may be very short. A few days ago Mr. Bates reminded his fellow congressmen that the mortality of the 57th Congress was greater in proportion than it was in the Spanish war. We seem to have adopted as a national motto, says the speaker, that no country may long endure if the foundations are not laid deep in the material prosperity which comes from thrift, from business energy and enterprise, and unsparing efforts. Let me supplement his warning by a prayer that the universities of our country may be the correctives of this whirl. Within academic walls, may their serene Highnesses, philosophy, literature, and science, reign forever in tranquillity, and to their lessons may the weary and busy resort for refreshment and recreation.

Half a century ago, in a ringing discourse, a distinguished orator looking westward raised the cry: "Barbarism the first danger." [1] The stream of immigration was beginning to bring to the Atlantic shores hosts of immigrants, and in the mind of this acute observer, this involved a tendency to social decline. "Already," in his opinion, "a very large

[1] Rev. Dr. Horace Bushnell before the American Home Missionary Society.

portion of the western community are so far gone in ignorance as to make a pride of it and even to decry education as an over-genteel accomplishment. The society transplanted by emigration cannot carry its roots with it. Education must for a long time be imperfect in degree and partial in extent." "There is no literary atmosphere breathing through the forests or across the prairies. The colleges, if any they have, are only rudimentary beginnings and the youth a raw company of woodsmen." "These semi-barbarians, the immigrants," he says, "are continually multiplying their numbers. Ere long there is reason to fear they will be scouring, in populous bands, over the vast territories of Oregon and California, to be known as the pasturing tribes, the wild hunters and robber-clans of the western hemisphere, American Moabites, Arabs, and Edomites."

How strange this sounds! How different would be the note of this orator of 1847 if he were able to speak to us in 1904! Behold this great valley, from the Alleghenies to the Rocky Mountains, filled with prosperous towns, with public schools everywhere established, with colleges and universities taking rank with the best in the country, with churches well maintained in every community, and with civic order, social happiness, mercantile honesty, and general thrift everywhere prevalent. Let this town of Madison, with its capitol, its university, and its historical society, stand out as a conspicuous example of what has been done in many places for the promotion of education and religion, the bulwarks of society.

My theme was "looking backward." My speech is made. May I have your attention for a moment more,—for looking around and looking forward.

I look around and behold a beautiful site which nature has adorned with all the charms of an inland landscape. As we drew near by an evening train, the dome of the capitol on one hill, the dome of the university on the other, shining

with a thousand lights, made known that law and order on the one eminence, science and religion on the other, were the guardians of the State,—friends, allies, watchmen, heralds. I see these convenient halls, well equipped with the apparatus of instruction and investigation,—chief among them the library. I meet the men who are the interpreters of nature and of history. I know their distinction and their fame. I hear of the alumni excelling in all the walks of life. All this, I remember, is the achievement of fifty years.

I look forward, and my sight grows dim. I dare not prophesy. But as I recall the words of that eloquent inaugural of yesterday, I share the hope, the confidence, and the optimism of your distinguished leader, believing that this, the university of the State,—this, the university of the people,—will be one of the most successful leaders of science and education among the many institutions of our land. Mr. President, I envy you; I echo your words; I endorse every sentence that I recall; I share your aspirations. I believe in your strength and I pray that beneath the guidance of Providence, the State of Wisconsin,—its administrators, its legislators, and its people,—may continue to foster, enlarge, and enrich their great institution, so that its benefits may reach every one of the inhabitants and its fruits be distributed in every portion of our land, for the healing of the nation.

THE RELATIONS OF YALE TO SCIENCE AND LETTERS

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The Bi-Centennial Celebration of Yale University took place in the week of October 22d, 1901. During the successive assemblies of several days, addresses were delivered on the Relations of Yale to Theology, Law, Medicine and Education. The subject of "The Relations of Yale to Science and Letters" was assigned to me.

XI

THE RELATIONS OF YALE TO SCIENCE AND LETTERS

In the mediæval convents, from which our academic usages are derived, there were annalists who noted the passing events. Dry and meagre are such records,—dry and meagre will our annals seem unless we see in them the working of principles and methods during a period of two centuries. It will be my endeavour to set forth the relations of Yale to science and letters in such a way that with historic insight you may discover the tendency and the influence of the school in which we have been trained, and may thus appreciate its benefits more fully than ever before. I shall not follow closely the order of chronology, and under the circumstances of this address, I must omit the praise of many among the departed and among the living, honoured and beloved. Law, medicine, and theology must be avoided; "it is so nominated in the bond." It will be good for each one of us to bear in mind the seven searching questions of an ancient critic,—

Quis, Quid, Ubi, Quibus auxiliis, Cur, Quomodo, Quando,

and to remember also that there is no process by which we can draw forth in forty minutes the rich vintages stored up in a period of forty lustrums.

The Collegiate School of Connecticut began well; Yale College improved upon the Collegiate School; Yale University is better than Yale College. The process has been that of evolution, not of revolution; unfolding, not cataclysmic; growth, and not manufacture; heredity and environment, the controlling factors. What we are, we owe to our ancestry and our opportunities. Hence the relations of Yale to Letters and Science cannot be adequately treated without looking

outside the walls, as well as inside,—by considering the wilderness of Quinnipiac; the dependence of the colony upon the mother country; the dicephalous State of Connecticut; the prosperous city of New Haven and its proximity to the great metropolis; and especially by considering what has been going on in the macrocosm of literature and knowledge where we represent a microcosm. Such a survey I shall not attempt, for I must keep close bounds. Yet even brevity must not suppress the fact,—that among the original colonists of New Haven, the real progenitors of Yale College, were three broad-minded men of education,—John Davenport, a student of Oxford and a minister in London; Theophilus Eaton, the King's ambassador at the Court of Denmark; and Edward Hopkins, a merchant of enterprise and fortune, and an early benefactor of American learning. Their successors also, the men of 1701, James Pierpont at the front, were worthy exponents of the ideas they had inherited; they were the wisest, broadest, and most learned men of this region in that day. Liberal ideas were then in the advance, and thank God, are not yet in the background.

New England brought from Old England the customs, the studies, the graduates of Oxford and Cambridge, not those of Scotland or France or Germany. The exotic germs were nurtured by Harvard for more than sixty years before the times were ripe for a second college in this region. Harvard instructors, laws, courses, phrases, were then adopted by the Collegiate School of Connecticut, and our alma mater began her life as a child of the new Cambridge and a grandchild of the old. "Harvard has nourished Yale eighty years kindly ordered in Providence," are the words of President Stiles. Yale has never ceased to be grateful for this noble ancestry, nor broken the chain of historic continuity. Yale does not forget that an honourable pedigree is its priceless possession, and delights to-day to honour its ancestry.

The seventeenth century was not the most brilliant period

of university education in the mother country. The functions of universities had been usurped by colleges. Their scope was restricted; their regulations rigid and petty. Science and letters were subordinate to logic and grammar, and the maintenance of orthodoxy. Nevertheless, the new school made the best of it,—and while still without a fixed habitation or a name, acquired both influence and reputation. It began with books, not bricks; with teachers, the best that could be had; and with ideas in respect to intellectual discipline which soon bore fruit in the service of church and state.

The division between our first and second centuries, corresponding with the eighteenth and nineteenth centuries of our era, is not simply determined by the calendar. There are two periods to be considered as well as two centuries, each deriving its characteristics from the spirit of the age. In the first of these, our fathers went through the good old colony times of dependence upon England; the Revolution; the establishment of constitutional government; and the enlargement of national life and hope. It was the period too when a free church was to be established in a free state, when Christianity was to be promoted without the rule of hierarchy. The business of a college was to train two sets of leaders, those who would develop and administer republican government under new conditions, and those who would be ministers of the word of God among a Christian people separated from the establishment. For scholastic discipline the books and methods approved in the mother country and adopted in Harvard were the only instruments. Such words as letters and science were not in their vocabulary. Religion and law, or as they said the church and state, were the dominant concerns of patriot and sage.

Days of privation, anxiety, dispute, apprehension and experiment introduced a time of stability, prosperity and union, —years of plenty after years of want,—and the second century opened with courage equal to opportunities. It is

true that the ideas of original research, of experiment and observation, now so familiar, were hardly perceptible, but science had begun its triumphal march, and the humanities, in a broad sense, were destined to engage more and more the attention of educated men.

In the first decade, our record of "the noble living and the noble dead" includes the name of one who was trained by alma mater for more than provincial usefulness and fame, Dr. Jared Eliot, who like the sages of antiquity, had the cure of souls and the care of bodies. A physician as well as a presbyter, living in a country town, preaching constantly, traversing a wide district on errands of mercy, he showed the qualities of an original investigator. He could ask hard questions and proceed to search for their answers; he would make no assertions that were not based upon observation or experiment, and he submitted his conclusions, by the printing press, to the scrutiny of the world. These are his sayings: "Entering on the borders of terra incognita I can advance not one step forward, but as experience, my only pole-star, shall direct. I am obliged to work as poor men live, from hand to mouth, and as light springs up before me, as I advance." Again: "As all theory not founded upon matter of fact and that is not the result of experience, is vague or uncertain, therefore it is with great diffidence that I have offered anything in way of theory which is only conjectural and shall always take it as a favour to be corrected and set right."

It is not too much to claim that he made the first contribution, from this land of iron and gold, to the science of metallurgy in a memoir entitled, "The art of making very good if not the best iron from black sea sand;" and he was a century or more in advance of his times in the promotion of scientific agriculture, as anyone may see by looking up the six tracts, which he published in quick succession, and afterwards collected in a volume, on "Field Husbandry in New

England." His science did not drown his humour and he has left this short biography of his laboratory assistant, who was sceptical about results and needed stimulant: "He being a sober man (says Eliot), who could use strong drink with moderation and temperance, I promised him if he could produce a bar of iron from the sand, I would send him a bottle of rum." Such in colonial days was the spirit that promoted research.

No wonder that Benjamin Franklin found Eliot out and wrote him affectionately, "I remember with pleasure the cheerful hours I enjoyed last winter in your company, and I would with all my heart give any ten of the thick old folios that stand on the shelves before me, for a little book of the stories you then told with so much propriety and humour." Poor Richard, when he ranked ten folios below the wit and wisdom of his friend in Guilford, paid a compliment to the collegiate school of Connecticut, but he had not in mind the folios with which the college was founded.

If it be true that Eliot was chosen a member of the Royal Society of London, the distinction is very great, for only David Humphreys, among Yalensians, had the like honour before the recent triumvirate, Dana, Newton, and Gibbs.

Of Jonathan Edwards, the philosopher and theologian, I have no right to speak, but he must not be exiled from men of letters, especially since it is customary in recent years to call him by the name of one of the most illustrious of epic poets. His contemporaries placed no limits on their praise, and even wrote on his tombstone *Secundus nemini mortalium,* thus transcending the well-known Florentian epitaph, *nulli aetatis suae comparandus.*

His grandson, with pardonable piety, declares that he

> "in one little life the Gospel more
> Disclosed, than all earth's myriads kenned before,"

and then, alarmed by his own eulogy, he adds, "The reader

will consider this proposition as poetically strong, but not as literally accurate."

Edwards may be called a poet suppressed. His writings are often noteworthy for the graceful language in which refined thoughts have expression, and although no rhymes or verses of his are extant, some passages have a Miltonic ring. The most orthodox among us may hazard the opinion that his visions of the future state are fitly classified as works of the imagination.

Many years ago this extraordinary man was likened by Dr. Samuel Osgood of New York to Dante, and this comparison has been recently amplified in two brilliant addresses by Dr. Allen and Dr. Gordon in the commemoration of Edwards at Northampton, a century and a half after his banishment. A cooler critic has called him a great glacial boulder, one of the two huge literary boulders deposited in New England thought by the receding ice of the eighteenth century. These striking terms may excite a smile, but they are not uttered carelessly, nor are they a misfit. The logic of Edwards is like a rock, fixed as those masses of stone upon yonder hill where the regicides took refuge, hard to move and not easily broken up. Cotton Mather was his fellow traveller upon the ice fields which once covered New England, leaving scratches and furrows on many an eminence.

It is pleasanter to think of the flaming preacher as the Dante of New England. His language often glows with fire; his words burn; his fancy carries him to the borders of the Inferno and to the gates of Paradise. Nor is this all we can say. Our Dante had his Beatrice, and the words in which he speaks of her may well be placed in a parallel with those which narrate the love of the Italian for the daughter of Folco. Hear the earliest record that has come down to us of Dante's precocious and enduring love. "She was perhaps eight years old, very comely for her age and very gentle and pleasing in her actions, with ways and words more serious

and modest than her youth required; and beside this, with features very delicate and well formed, and further so full of beauty and of sweet winsomeness that she was declared by many to be like an angel." "Although a mere boy, Dante received her sweet image in his heart with such appreciation that from that day forward it never departed thence while he lived."

Four centuries after Dante, Jonathan Edwards made this note in respect to the New England maiden of fourteen years, who became his wife. "They say there is a young lady in New Haven who is beloved by that Great Being who made and rules the world, and that there are certain seasons in which the Great Being comes to her and fills her mind with exceeding great delight. . . . She is of a wonderful sweetness, calmness and universal benevolence, especially after this Great God has manifested Himself to her mind. She will sometimes go about from place to place, singing sweetly, and seems to be always full of joy and pleasure, and no one knows for what. She loves to be alone, walking in the fields and groves, and seems to have some One invisible always conversing with her."

Dante and Edwards alike in love, alike in their spiritual fervour, and in their impressive imagery, were alike in exile, both were driven from their homes, both died among strangers, both have been honoured with increasing reverence by the descendants of those who rejected them.

In his youth Edwards showed a noteworthy proclivity toward the study of nature. An article is extant which he wrote at the age of twelve, recording his observations upon spiders and displaying the same qualities as those of Lubbock and Maeterlinck. Moreover, his undergraduate notebook gives evidence that his mind was alert for knowledge in other fields, and that he could ask searching questions in physics, including electricity, meteorology, physical geography, and vegetation. One who was familiar with these

precocious memoranda remarks that if they were written, as supposed, between the ages of fourteen and sixteen, "they indicate an intellectual prodigy which has no parallel." If he had been taught to use the lens and the metre as he used the lamp, he might have stood among the great interpreters of nature,—the precursor of Franklin, Rumford and Rowland.

He was nurtured by theological dialectics, and he excelled not in physics, but in metaphysics, so, to-day, instead of honouring him as a leader in literature or science, we can only acknowledge with filial reverence his wonderful influence upon the opinions and characters of six generations. The laws of intellectual inheritance are obscure, and the influences he has handed down cannot be measured. It is, however, noteworthy that three of his descendants occupied the presidential chair of Yale for nearly sixty years; many others have been among our teachers; indeed there are few years in our second century in which the Faculty has not included one or more of his posterity. I have read the printed verses of seven of his descendants,—no small part coloured (may I be pardoned for saying so) with the cerulean hue of religious fervour.

It is interesting to dwell upon the names of Edwards and Eliot as men of more than provincial fame, because the number of Yalensians who can be regarded as contributors to literature and science prior to the Revolution is small. The historian, Tyler, has taken the year 1765 as the close of the sterile period, when colonial isolation was ended and American literature began to be worthy of the name. Before that time neither Harvard nor any place in this land has much to speak of; yet afterwards, until the close of the eighteenth century, the product is almost as scanty. A recent paper enumerates the texts by which the youthful minds were disciplined.[1] Although the manuals and the methods

[1] By Professor Schwab.

were not inspiring, they encouraged discrimination and that power which used to be called ratiocination, "generation of judgments from others actually in our understanding." You may say that this is not "experimental science nor literary culture," and you say well. The ore, indeed, may have been extracted, by the Eliot process, from black sand, but the Bessemer process had not been invented for turning iron into steel. Nevertheless, we have the assurance of a recent Massachusets critic,[2] that the highest literary activity of the later eighteenth century had its origin at Yale College.

Our elder brethren of the eighteenth century, with whom most of us have no more acquaintance than we get from the hortus siccus of a biographical dictionary, were men quite as intellectual as men of our day. When their acquaintance is cultivated and when the minute incidents of their lives and their quaint characteristics are sought out, they are as interesting as our contemporaries. Let us cease to regard them as mummies. The story of Manasseh Cutler is a succession of romantic incidents. Bishop Berkeley's transitory interest in the college, and his permanent influence upon it, is a captivating record. Jeremiah Dummer, little more than a name to most of us, was called by Charles Chauncey one of the three greatest New Englanders. The story of Liberty Hall, where William Livingston lived with his charming family of daughters, might be commended as the basis of a novel to the author of "Hugh Wynne." Rector Clap, the fighting rector, led a life full of racy incidents, and certainly we have no more picturesque character on the roll than Dr. Stiles, now re-introduced by Professor Dexter to the society of which he was once a distinguished ornament,—that extraordinary polyhistor to whom all knowledge was attractive, all tongues appetising, and all events pregnant.

As we recall the writers of influence and distinction among our brethren, we cannot fail to observe the dominant religious

[2] Professor Barrett Wendell.

spirit which most of them show, and it may be well at the outset to remind you that the identity of theology and poetry is not peculiar to New England. The earliest biographer of Dante declared that "theology was nothing else than the poetry of God." "Not only is poetry theology, but theology is poetry," says Boccaccio, and then he adds that if these words of his merit but little faith, "the reader may rely on Aristotle, who affirms that he had found that poets were the first theologians." Judged by this standard, we might find a good deal of poetry in our Yalensian products, during the eighteenth century, but by the criteria of modern scholarship, not much that would be commended by Matthew Arnold, not much that our own anthologist would cull for preservation.

Before the middle of our first century there appeared in New York a volume containing seven hundred lines of verse entitled "Philosophical Solitude; or the choice of a rural life:—by a gentleman educated at Yale College." This anonymity did not long conceal the authorship of William Livingston, one of the brightest students of his time, distinguished in many ways,—once as "the Presbyterian lawyer," and later as Governor of New Jersey and a member of the Constitutional Convention. His brother, also a Yalensian, was a signer of the Declaration. The verses show the influence of Pope, and among other points of interest in them, are allusions to the writers whom this young graduate desired as his intimate friends in the rural life he intended to lead.

In the Revolutionary War two of our brethren, while acting as chaplains, were composers of patriotic songs. Many years later the inspiration of the muses descended upon a number of recent graduates, who became known as "the Hartford wits,"—"four bards with Scripture names," John, Joel, David and Lemuel, any one of whom could produce an epic as surely, if not as quickly, as the writer of to-day would

compose an article for the *Yale Review*. The group included John Trumbull, a precocious youth fitted for college at the age of seven, whose burlesque treatment of the Revolutionary War, called "McFingal," ran through thirty unauthorised editions; the versatile Joel Barlow, author of "Hasty Pudding," who worked for half his life, we are told, upon the "Columbiad," having in the interval of his engagements "adapted Watts' Psalms to the use of the Connecticut churches and added several original hymns"; David Humphreys, who translated a French tragedy, entitled the "Widow of Malabar," and composed several ambitious poems; and finally, Lemuel Hopkins, an honourary graduate. The Harvard historian whom I have already quoted has said that at the time the Hartford wits wrote, no Harvard man had produced literature half as good as theirs.

Perhaps one may, without offence, at this late day, refer to the ponderosity of this early poetry. "McFingal" and "Hasty Pudding" and the "Progress of Dulness" would hardly be found amusing in these days, although they were mirthful. "Greenfield Hill" is hard reading. The seriousness of such subjects as the "Conquest of Canaän," the "Vision of Columbus," the "Anarchiad," the "The Last Judgment, a Vision," was characteristic of the times and was adequately sustained by the serious treatment to which these themes were subjected. Indeed, in this period, lofty ideals were entertained, and long and elaborate poems were so naturally attempted that a commencement orator (as late as 1826) delivered a discourse on "some of the considerations which should influence an epic or a tragic writer in the choice of an era." The spirit of Hebrew poetry hovered over our elms, more constant than Calliope or Euterpe. It suggested dramas which have died, it found expression in hymns which have lived. I could name five of these. Brethren, answer the question of Emerson,—

"Have you eyes to find the five
Which five hundred did survive?"

At the beginning of our second century, we come upon the name of John Pierpont, preacher, patriot, advocate of every cause which would improve his fellow men, whose verses are at the front of two recent anthologies. Bryant just missed enrolment among us. He took a dismissal from Williams in order to enter Yale, but he did not fulfil his purpose. Fitz-Greene Halleck, a native of this county, did not go to any college. Not long after Pierpont, the two Hillhouses were graduated. The elder brother, James Abraham Hillhouse, was author of "Percy's Masque" and three other dramas, the last of which, entitled "The Judgment, a Vision," was intended by the author to present "such a view of the last grand spectacle as seemed most susceptible of poetical embellishment." He was a gifted writer of fine taste and lofty ideals; and his writings were most highly esteemed by the generation to which he belonged. His name is dear to us as the poet of Sachem's Wood, the beautiful park at the head of Hillhouse Avenue,—the park and the avenue alike commemorating his distinguished father, to whom the city of Elms is beyond estimate indebted. For East Rock and West Rock he suggested the names of "Sassacus" and "Regicide."

Later came Brainard, cut down in his youth, and brought to life at the call of Whittier; and William Croswell, son of the rector of Trinity Church, one of the most cultivated of churchmen, whose poems, ten years after he died, were edited by Bishop Coxe. In the class of 1820 were two men whom we honour for so many other reasons that we forget their poetry,—Woolsey and Bacon. As the first quarter of the century closed, the college diploma was given to James G. Percival, that unique, eccentric, impracticable combination of science and literature, learned to superfluity, versatile to inconstancy, loving nature, books, words, yet disliking men as

he met them; geographer, geologist, linguist, lexicographer, poet, with much of the distinction and a fair amount of the infelicity which characterises genius. His metrical studies are remarkable illustrations of the laws of verse. Next came N. P. Willis, graceful in prose and verse, remembered by some for his Biblical lyrics, and by others for lines in praise of New Haven elms; and soon, Ray Palmer, whose sacred song has been translated into twenty languages, and sung in Arabic, Tamil, Tahitian, Mahratta and Chinese, as well as in the tongues of Christendom. George H. Colton, one of a family that has cultivated the muses, published a poem on Tecumseh soon after he graduated in 1840. Twenty years later came Weeks and Sill,—Weeks, who died before he had stretched his wings for the flights of which he was capable; and Sill, bright and beloved Sill, whose verses, collected since his death, exhibit, as do his essays and letters, an intellect strong, unconventional and suggestive. These are not all the departed whom we may hold in honourable remembrance.

It is no part of my plan to say much about the living, but there are two writers entitled to special mention,—Finch, the author of stanzas which have brightened the fame of Nathan Hale; and Stedman, anthologist and historian of Victorian poetry, the poet of yesterday and to-morrow, the youth who won his laurels as an undergraduate writer in the *Yale Literary Magazine;* the singer who wears them still upon his frosty brow.

The comparison has been made between the graduates of Harvard and of Yale, and the long and brilliant list of historians and poets of Cambridge has been contrasted with the shorter and less famous list of New Haven. Our friends in the East will doubtless attribute something, as is their wont, to the proximity of Boston, a beacon set upon the hill, a port of entry for the culture of other lands, where the Athenæum, still foremost among the society libraries of the United States,

was an inspiring resort, close akin to the London Library, giving to men of letters both sustenance and stimulant. It is, however, probable that the difference between the two colleges is due to the fact that in Eastern Massachusetts, during the last century, dogmatic theology has been neglected and the ablest intellects have been free to engage in literary production. Perhaps this is true. I do not know. We may claim this, however, without making any comparison, that Yalensians from the beginning were brought up in obedience to "Duty, stern daughter of the voice of God"; that the college was founded for the fitting of men to serve the church and state, and that the graduates of Yale, whether famous or unknown, are devoted to the service of their country and show that they have been trained to think, to reason, to write and to speak with freedom and with force. We can every one of us recall classmates and friends, men we have heard and men we have heard of, village Hampdens or mute inglorious Miltons;—and we can also recall those who have shown, at the bar and on the bench, in the cabinet and in diplomacy, those qualities which under other conditions would have made them orators and authors. The point I make is this, that the Yale training has tended to the development of strength rather than of grace. "I thank God," said a famous preacher who studied in both places, "that I struck no literary roots at Yale and no theological roots at Harvard." "I thank God, too," said one of his teachers at New Haven.

It is certainly true that hundreds of the graduates of Yale have been accurate and forcible writers, who have known what to say and how to say it; and that they have in this way rendered an incalculable service to the country, far and wide, even though we admit that, under the pressure of strenuous life, but few of them have shown those literary qualities which are usually evoked where writers and critics come in close relation to one another, as they do in cities and in large

universities. Long ago, Bishop Fraser said of the United States, that the people were the most generally educated, if not the most highly educated, people in the world. Something like this we may say of the Yale alumni,—if they number few men of genius, they number many men of talents, usefulness and power; if there are none who are equal to Tennyson and Schiller and Victor Hugo, there are many who have been the advocates of truth and the promoters of social reform, in terse and vigorous English. They have excelled in the pulpit and at the bar, and in the halls of legislation, so that without mentioning the names of men whom we have personally known, I will remind you of that long line of jurists and statesmen who were living near the beginning of our second century, William Samuel Johnson, Pelatiah Webster, John C. Calhoun, James Kent, Jeremiah Mason, and that constellation of New England theologians, an innumerable host, from Edwards to Taylor.

Professor Kingsley was called the Addison of America, and he had such wit, knowledge and grace as might have given him distinction in literary composition if he had so directed his energy; but he was one of those "generally useful men" that this college produces, who held at one time what we should call four chairs. We should all be proud to claim, as the product of our alma mater, James Fenimore Cooper, but we cannot, for like Shelley from Oxford he was driven out because of a boyish misdemeanour. If we cannot claim Cooper, Theodore Winthrop is ours,—the essayist and novelist, whose posthumous fame shows what was lost to letters when he died a patriot's death upon the field of battle. Long distant be the day when Yale will place among the *stelligeri* the name of Donald Grant Mitchell, historian and essayist, whose writings have awakened reveries in successive generations of Bachelors graduating from these walls, whose life has been to them a bright example of devotion to letters.

In the second quarter of the nineteenth century the influ-

ence of Coleridge is apparent. William Adams, Horace Bushnell, Lyman Atwater, William Watson Andrews, and Noah Porter are conspicuous examples of this infusion of idealism. Their writings are in evidence. The powerful imagination which produced "The Ancient Mariner" and "Christabel" had been directed to the transcendent study of the Infinite, and many who turned away from the most rigid tenets of Calvin, and from the severe interpretation of the Old Testament, were strengthened and guided by the philosopher of Highgate.

Bushnell confessed greater indebtedness to "Aids to Reflection" than to any other book save the Bible. Of this theological emancipator I am not called upon to speak,—of the gifted writer more than passing mention must be made. His sermons, addresses and essays always arrested the attention and excited the imagination of those who heard and those who read them. For example, his estimate of Connecticut, his "Age of Homespun," indeed all the contents of his "Work and Play," and many parts of "Nature and the Supernatural," glow with life and fancy, and will be as good reading for our grandchildren as they were for our fathers. The incisive notes of his voice as I first heard it when an undergraduate still ring in my ears,—and his racy sentences, his inspiring and suggestive phrases, and the eloquence of his thoughts were even more impressive than his voice. The name of Horace Bushnell is a precious heirloom handed down from the Yale of the last century to the Yale of the present. He was an orator, a poet, a lover of nature, and of man,—fearless, original, persuasive, too liberal for the conservatives, too conservative for the liberals of that day, now honoured in both their schools. Horace Bushnell is the greatest of this theological group. Indeed I should place him, in genius, next to Jonathan Edwards.

Not a few of our brethren have excelled in historical writing. Stiles wrote a history of the exiled Judges, and Benja-

min Trumbull the history of Connecticut; Samuel Farmer Jarvis was designated historiographer of the Episcopal Church; Moses Coit Tyler is the historian of American literature; Andrew D. White is the defender of science versus bigotry, whose history should make us grateful that Yale has been one of the most important American agencies for the emancipation of the human intellect from ignorance and dogmatism; Charles L. Brace is the exponent of Gesta Christi; George P. Fisher, an honoured member of the Faculty for almost fifty years, stands in the foremost rank among the ecclesiastical historians of this country, and Leonard Bacon, the Puritan, always remarkable for clearness and vigour, whether religion or politics was his theme, is the author of discourses on the early days of New Haven, which remain unsurpassed in the field of local history. He was like a modern Isaiah, the trenchant defender of political righteousness. Stillé's pamphlet, "How a Free People Conduct a Long War," was one of the most inspiring products of the uprising for the Union; and Schuyler's studies in Turkistan and his essays in diplomacy are enduring memorials of another "all round man," observer, critic, traveller, essayist, historian, diplomatist,—good in whatever he undertook.

Comparative philology was introduced among us by Josiah W. Gibbs,—but the chief impulse in this direction came from Salisbury, the first to teach Sanskrit in America. He recognised the ability and secured the services of one who was not a graduate, it is true, but an adopted son, whose honours are our honours, whose fame carries the name of Yale to every university of the Indo-European world, that illustrious scholar, William D. Whitney. We must remember that James Murdock in 1851 published a translation of the Peshito Syriac version of the New Testament; that Moses Stuart at an earlier day carried from New Haven to Andover, an enthusiastic, if not always accurate, devotion to Biblical literature; and that a learned and devoted scholar, Eli Smith,

within sight of Mt. Lebanon, translated nearly all the Bible into Arabic,—as in later days Hiram Bingham translated it into one of the languages of the Pacific islands.

Another interesting phase of philological study is shown in the attention given to the study of the languages of the North American Indians. This began very early, when Sergeant, Brainerd, Spencer, and Edwards were engaged as missionaries to the aborigines in Western Massachusetts and in Central New York. The philological importance of the American tongue was recognised in recent days by James Hammond Trumbull, who with rare aptitudes for the elucidation of knotty problems, directed his attention to the Indian languages of the Eastern States, and was soon acknowledged as foremost in that uninviting and perplexing field of inquiry. Before long we shall have his lexicon of the Natick Speech, so that he who will may cultivate the love of comparative literature by reading Eliot's Indian Bible. Daniel G. Brinton in other branches of aboriginal research has also won renown.

An unusual manifestation of the love of letters is shown by the attention given during the last century to lexicography. For a time Yale was a veritable storm-centre. Webster versus Worcester, and Worcester versus Webster were chieftains in this "Battle of the Books," and both authorities were graduates of Yale. Lately, Whitney, W. the Third, has taken rank with the best antecedents, and a score of co-operative Yalensians, many of them specialists, have been engaged in the improvement of the three great dictionaries. It is customary to laugh at the changes in spelling proposed by Noah Webster, and certainly some of the Johnsonese definitions which he propounded were mirth provoking,—("sauce," for example),—but revised and improved by Goodrich, Porter, Kingsley and others, his dictionary holds its own. Its popularity was due in part, no doubt, to Webster's spelling book, of which the annual sale

at one time was twelve hundred thousand copies. By this primer a very great service was rendered to letters,—for it helped to counteract any tendency toward provincial or dialectic peculiarities among the heterogeneous people of the United States. May we not in this connection remember that, like a modern Cadmus, Morse gave an alphabet to the silent utterances of electricity,—now employed in wireless telegraphy.

Apart from theology, philosophy has engaged the attention of many of our ablest brethren. This is especially true of the time since Porter was called to the professorship which he held with conspicuous distinction for almost half a century, including the years of his presidency. A recent investigator has traced the influence of this able teacher, well versed in the modern writers of Germany, who made metaphysics interesting to those who were indifferent, and was at his best in the analysis of conflicting theories and in the detection of subtle errors. As a lawyer for the defence, he would have been the peer of Rufus Choate. Not a few of his pupils have been led through philosophy to pedagogics and are winning distinction in this field.

This review would be incomplete if I did not mention the *Yale Literary Magazine,* which for more than three score years has kept up the love of literature among the undergraduates, and has furnished them with appreciative readers, critical enough and friendly enough for discipline. Many editorial writers have been trained by their service on this magazine, since William M. Evarts set the press in motion. Older Yalensians have had their opportunities in magazines of wider circulation, the *Christian Spectator* the *New Englander* and the *Yale Review,*—not officially connected with the college, but supported by the faculty.

The literary societies also, which, for more than a century, were maintained with vigour, seem to me to have been one of the very best agencies for youthful discipline. The

spontaneous efforts of young men, excited by the emulation of their comrades, and controlled by the friendly criticism of their peers, were admirable exercises for the development of the love of poetry, oratory, essay writing, and debate.

One of the greatest services which this college has rendered to literature and science has been the preparation of an innumerable host of teachers and professors. The list is too long for recapitulation here,—but a few names must be recalled. The earliest was Jonathan Dickinson, first President of Princeton, deemed in his time the peer of Edwards, whose immediate successors were likewise Yalensians. Next came Samuel Johnson, the friend of Berkeley, first President of Columbia University, and his more famous son, William Samuel Johnson, elected Provost of the University of Pennsylvania, who succeeded to the presidency of Columbia, and stood in the first rank among the statesmen of the period just subsequent to the Revolution. From the Wheelocks of Dartmouth to Sturtevant of Illinois, Chauvenet of St. Louis and Chapin of Beloit, the file leaders in our colleges have constantly been elected from Yale. At a recent date lived Thomas H. Gallaudet, pioneer in the instruction of deaf mutes, and Henry Barnard, ever to be associated with Horace Mann, as advocate, expounder and promoter of the American system of common schools. Nor can I forget Henry Durant, and the other graduates of this college, who went to the Pacific Coast, "with college on the brain," and planted in California the seeds of learning which now bear harvests of golden grain. A happy thought gave the name of Berkeley to the site near the Golden Gate, where an institution begun by our brothers fulfils the remarkable prophecies of Timothy Dwight, written in 1794:

> "All hail! Thou Western World! by heaven designed
> The example bright to renovate mankind!
> Soon shall thy sons across the mainland roam
> And claim on fair Pacific's shore a home.

"Where marshes teemed with death, shall meads unfold,
Untrodden cliffs resign their stores of gold.
Where slept perennial night, shall science rise,
And new-born Oxfords cheer the evening skies!"

Let us turn from letters to science. As I scan the administrative records, from the beginning onward, with the aid of our right well beloved and trustworthy archivists, the two Kingsleys and Dexter, when authority passes from one President to another, the balance is kept true. Pierson was an exponent of geometry and a defender of the faith, who wrote out lectures upon Physics, and dictated them to successive classes; Cutler's short service gives little indication of his attitude; Williams loved public life more than academic perplexities; Clap was a writer on ethical and astronomical subjects,—a student of the Bible, scarcely equalled, says his successor, in mathematics and physics by any man in America; Daggett, extremely orthodox, was scientific enough to warn his townsmen, scared by "the Dark Day," not to be alarmed nor "inspired to prophesy any future events—till they should come to pass;" Stiles was familiar with every department of learning,—"theology, literature, science, whatever could interest an inquisitive mind . . . he included among the subjects of his investigations;"[3] the elder Dwight is well known for the impulse that he gave to the expansion of the college in all directions; the judicious Day was the author of a metaphysical study and of mathematical text-books; Woolsey is distinguished as the promoter of classical literature, and at the same time as the President under whom the School of Science was developed; Porter and the younger Dwight brought the University forward to its present comprehensiveness and influence in all branches of knowledge. Indeed, science and letters have always been the care of the Corporation, and such will be the case while the helm is held by the discerning and vigorous pilot under whom the bark

[3] Quoted from J. L. Kingsley.

begins another voyage, and so long as the alumni crew support the master and the mates.

Considering the hesitation with which the English universities recognised the study of nature as their concern, and how easy it is to awaken hostilities between the students of science and letters, or between ecclesiastics and naturalists, it is well to remember how early science came into the Yale curriculum, and how steadily it has held its place. A chair of mathematics, physics, and astronomy was instituted thirty years before the professorship of ancient languages. As it is pleasant to associate the name of Sir Isaac Newton with the beginning of our library, it is likewise pleasant to remember Benjamin Franklin as a donor of scientic apparatus. "Immortalis Franklinus" he was called by Stiles. Before the college was fifty years old he had become its valued friend, and was enrolled among the laureati in 1753. Four years previous he had sent here an electrical machine which enabled the young tutor, Ezra Stiles, to perform the first electrical experiments tried in New England. A Fahrenheit thermometer was a subsequent gift of Franklin's, and his influence led the University of Edinburgh to confer upon Stiles a Doctor's degree.

At the dawn of scientific activity in New England we see the commanding and attractive figure of our elder brother, Manasseh Cutler, storekeeper, lawyer, soldier, statesman, pastor, preacher, physician and naturalist, member of the Legislature and of Congress, appointed to the federal bench, advocate of the "homestead" policy, and a pioneer among the settlers of the wilderness of Ohio. His greatest distinction is the part that he took in drafting and passing the ordinance of 1787, by which slavery was excluded from the Northwest territory and a grant of the public domain was secured for the promotion of education. That is a record to be proud of, brethren of the Alumni, but it does not include the whole story. Cutler, a man of the true scientific spirit, an ob-

server of the heavens above and of the earth beneath, is the father of New England botany. He made a noteworthy contribution to the memoirs of the American Academy, collected and described between three and four hundred plants of New England, and left seven volumes of manuscript notes, which are now in the Harvard herbarium, awaiting the editorial care of a botanical antiquary. Franklin and Jefferson valued him as a friend, and his correspondents in Europe were among the chief naturalists of the day.

About the beginning of the nineteenth century Dwight and his three professors, who only uttered *sotto voce* the word university (though Stiles had written it in 1777), lest they should be regarded as pretenders, introduced a new era in which the progress has been constant and of increasing rapidity. In this new era classical studies have been promoted by Kingsley, the lover of antiquity, whose keen sword defended the study of the classics; Woolsey, the lover of letters, who introduced us to Plato and the dramatists of Greece; Thacher, the lover of students; Hadley, the lover of lore; Packard, the lover of learning,—and by the accomplished standard bearers still living; and science likewise had its skilled promoters; Silliman, leader in chemistry, mineralogy and geology, the alluring teacher, the captivating lecturer, unsurpassed by any, equalled only by Agassiz; Olmsted, the patient, inventive instructor, whose impulses toward original investigation were not supported by his opportunities; Loomis, interpreter of the law of storms and master of the whirlwind; Dana, the oceanographer, who wore the tiara of three sciences; Newton, devoted to abstract thought, who revealed the mysteries of meteoric showers and their relation to comets, not before suggested; and Marsh, the inland explorer, whose discoveries had an important bearing on the doctrine of evolution,—these all with the brilliant corps of the Sheffield Scientific School were men of rare ability who expounded and illustrated the laws of nature with such clear-

ness and force that the graduates of Yale are everywhere to be counted as for certain the promoters of science.

Two agencies are conspicuous in the retrospective of this second era, the *American Journal of Science* and the Sheffield Scientific School. Benjamin Silliman showed great sagacity when he perceived, in 1818, the importance of publication, and established, of his own motion, on a plan that is still maintained, a repository of scientific papers, which through its long history has been recognised both in Europe and in the United States as comprehensive and accurate; a just and sympathetic recorder of original work; a fair critic of domestic and foreign researches; and a constant promoter of experiment and observation. It is an unique history. For more than eighty years this journal has been edited and published by members of a single family,—three generations of them,—with unrequited sacrifices, unquestioned authority, unparalleled success. In the profit and loss account, it appears that the college has never contributed to the financial support, but it has itself gained reputation from the fact that throughout the world of Science, Silliman and Dana, successive editors, from volume 1 to volume 162, have been known as members of the Faculty of Yale. I am sure that no periodical, I am not sure that any academy or university in the land has had as strong an influence upon science as the *American Journal of Science and Arts.*

A century has nearly passed since Benjamin Silliman was chosen a professor and went to Scotland, there to fit himself for the duties of the chair. What a century it has been! The widespread interest among our countrymen in geology, mineralogy, and chemistry is due in no small degree to his college instructions and to the lectures that he delivered in many cities between Boston and New Orleans.

The Sheffield School celebrated three years ago its semi-centennial, and its useful services were rehearsed by one who will not venture to offer you a twice told tale. You must,

however, permit him to remind you that fifty years ago the choice of studies was but timidly permitted in the traditional college, and that there was a strong demand for courses less classical, more scientific than were then offered. These wants the school supplied without antagonism or rivalry, though not without the awakening of alarm. It proved to be a rich addition to the resources and the renown of Yale, as everyone admits. Its faculty was made up chiefly of men whose ideas were broad, whose distinction was acknowledged, whose methods were approved, and this, with the munificent support of the benefactor whose name the school has been proud to bear, enabled Yale to stand forth as the ready, wise and resolute promoter of education in science. The alumni of the school are the proofs of its success.

Agricultural science in the United States owes much to the influences which have gone out from the Sheffield School. John P. Norton, John A. Porter, Samuel W. Johnson, William H. Brewer, each in his own peculiar way, has rendered much service. Johnson is pre-eminent, and in addition to his standing as a chemist is honoured as one of the first and most persuasive advocates of the Experiment Stations now maintained, with the aid of the government, in every part of the country. We cannot forget the value of "the crops,"—we may forget how much their value has been enhanced by the quiet, inconspicuous, patient and acute observations of such men as those whom I have named, the men behind the men who stand behind the plough. They are the followers in our generation of Jared Eliot, the colonial advocate of agricultural science.

In the thirties there was an informal association which may be called a voluntary syndicate for the study of astronomy. Its members were young men of talents, enthusiasm and genuine desire to advance the bounds of human knowledge, but their time was absorbed by various vocations, and their apparatus seems lamentably inadequate in these days

of Lick and Yerkes, of spectroscopes, heliometres and photography. Yet we may truly claim that the example and success of these Yale brethren initiated that zeal for astronomical research which distinguished our countrymen.

The Clark telescope, acquired in 1830, was an excellent glass, though badly mounted, and was then unsurpassed in the United States. One of its earliest and noteworthy revelations was the appearance of Halley's comet, which was observed, from the tower in the Athenæum, weeks before the news arrived of its having been seen in Europe. This gave an impulse to observatory projects in Cambridge and Philadelphia, and college after college soon emulated the example of Yale by establishing observatories in embryo, for the study of the heavens. The most brilliant luminary in our constellation was Ebenezer Porter Mason, a genius, who died at twenty-two, having made a profound impression on his contemporaries by discoveries, observations, computations and delineations. After his death, which was lamented like that of Horrox, it was not thought an exaggeration to compare his powers with those of Sir William Herschel,—or even with those of Galileo. Under the leadership of Olmsted, Herrick, Bradley, Loomis and Hamilton L. Smith were associate observers, and they were afterwards re-enforced by Twining, Lyman and Newton. Chauvenet became a writer and teacher of renown, and the missionary Stoddard carried to the Nestorians a telescope that he had made at Yale under the syndicate's influence.

The investigations of these astronomers were directed to the aurora borealis, the zodiacal light, the recurrence of comets, the meteoric showers, and the possible existence of an intra-mercurial planet. Newton became the most distinguished of the group. Partly by antiquarian researches in the records of the past, continuing the notes of Herrick, partly by mathematical analysis and a careful comparison of the paths of meteors he determined the periodicity of these

mysterious and fascinating phenomena, and their relation to comets.

The astronomical syndicate of Olmsted and his pupils was long ago dissolved, but its spirit hovers near us, and beyond Sachem's Wood, in the Winchester Observatory, skilled astronomers with their great heliometer are engaged upon problems which were not even thought of by the discerning intellect of Mason and his brilliant confrères.

In the science of mineralogy Yale has long maintained the American leadership. Every one of us has heard the story of the candle-box of specimens, which Silliman carried to Philadelphia to be named, and every one of us has seen the subsequent accretions to be the nucleus, beginning with the Gibbs cabinet, now shown in the Peabody Museum. No one is likely to over-estimate the influence of this collection upon the mind of James D. Dana, nor to over-estimate the value of his treatise on mineralogy which, revised and enlarged by able co-operators, continues to be a standard authority in every country where mineralogy is studied. In view of its recent acquisition, I am tempted to speak of the Museum as the "House of the Dinosaur." Its choice collections give an epitome of the sciences of mineralogy, crystallography, meteoroids, geology, palæontology, and natural history, from the days of Silliman to those of the Danas, Brush, Marsh and Verrill.

The heart of a university is its library. If that is vigorous, every part of the body is benefited. Our college began with books; the incunabula were given by the founders, good books no doubt, if not a single volume relating to classical literature or the sciences were among them. Noteworthy accessions came at an early day, some of them from Elihu Yale. Think of eight hundred volumes sent from England, including the gifts of many famous writers. Remember such donors as Sir Richard Steele, of the *Spectator,* and the great Sir Isaac Newton,—and then be grateful to forgotten

Jeremiah Dummer, who collected and forwarded this precious invoice. Fifteen years later than Dummer's donation came nine hundred volumes from Bishop Berkeley, which with his bequest for scholarships and prizes, entitle him to receive the highest praise as an early and liberal promoter of the humanities. Renewed homage should now be given to the benefactor whose timely and catholic bounty enriched this adolescent college. Therefore, let us repeat once more the verse of Alexander Pope, and ascribe "To Berkeley, every virtue under heaven." Gratitude to this great philosopher shall not diminish our acknowledgments to that long line of donors who have made the library worthy of the university which has grown up around it,—Chittenden, foremost among them.

Bibliographers and librarians are the servants of the temple,—*servi servorum academiæ,*—and such as Edward C. Herrick, Henry Stevens, William F. Poole, James Hammond Trumbull, and Robbins Little, are rare men, conspicuous among the promoters of historical research.

In controversial periods the attitude of Yale has been very serviceable to the advancement of truth. The Copernican cosmography was probably accepted from the beginning, although elsewhere the Ptolemaic conceptions of the universe maintained their supremacy, and the notes which Rector Pierson made on Physics when he was a student in Harvard come "between the Ptolemaic theory and the Newtonian" (Dexter). When geology became a science, its discoveries were thought to be in conflict with the teachings of the Scripture. Ridicule attacked the arguments of science, and opprobrium was thrown upon the students of nature. Brave Silliman stood firm in the defence of geology, and although some of the bastions on which he relied became untenable, the keep never surrendered, the flag was never lowered. When the modern conceptions of evolution were brought forward by Darwin, Wallace and their allies, when conservatists

dreaded and denounced the new interpretation of the natural world, the wise and cautious utterances of Dana at first dissipated all apprehensions of danger, and then accepted in the main the conclusions of the new biological school. The graduates who came under his influence were never frightened by chimæras. Marsh's expeditions to the Rocky Mountains, and his marvellous discoveries of ancient life, made the Peabody Museum an important repository of geological testimony to the truth of evolution.

I remember the surprise of Huxley in 1875 when, at a dinner of the X Club in London, I told him of Marsh's discovery of the fossil horse. In the following year, the great English naturalist came to New Haven to see in the Peabody Museum that of which he had heard and read. In his lectures at New York he soon described the work of Marsh, and subsequently referred to its important bearings.

Scant justice has been done in this discourse to the sciences promoted at Yale,—and the deficiency is the more apparent when I think of the men now living whose work has been precluded from our scope. The next centennial discourse may do justice to them. Among the departed whose careers were made outside the walls of Yale, Percival, the geologist of Connecticut and Wisconsin, J. D. Whitney, the geologist of California, Chauvenet, the mathematician, Hubbard, the astronomer, Sullivant, the chief authority in mosses as Eaton is in ferns, F. A. P. Barnard, the accomplished President of Columbia, Eli Whitney, the inventor of the cotton-gin, and S. F. B. Morse, whose name is familiar from its relation to the electric telegraph,—are especially entitled to honourable mention in this jubilee. So is a much older graduate, David Bushnell, the inventor of submarine explosives,—the precursor of the modern torpedoes. So also, Elisha Mitchell, mineralogist, geologist, explorer, whose body is entombed upon the lofty peak in North Carolina which bears his honoured name.

There is a good deal to think about in the annals of Yale. It is not a perfect record. Deficiencies, errors, failures are met with from time to time,—such as are found in every human institution, even in those most sacred. It is not my business to seek them or point them out. It is rather my privilege to honour the good men that have built up for us and for our successors this great edifice, upon the firm foundations of devotion and faith; to admire the skill, the prudence and the honesty with which inadequate resources have been husbanded; and especially to appreciate that admirable union of conservative and progressive forces which keeps hold of that which is good until the better is reached, that believes in the study of Nature and all its manifestations, and of Man and all that he has achieved in language, philosophy, government, religion, and the liberal arts.

This honoured and reverend seminary has taught thousands of men of talent to be wise and good citizens, avoiding avarice and pretence, ready for service wherever Providence might call them, in education, philanthropy, diplomacy, statesmanship, church-work, literature and science; not a few men of genius have submitted themselves to her discipline and acknowledged the inspiration derived from her counsels; some of her sons have laid down their lives for God and their country; many have carried to the ends of the earth her precepts and principles; all, or nearly all, have been the friends and supporters of republican institutions, the lovers of sound learning and good books, the promoters of science whenever their aid was wanted, its alert defenders against bigotry and alarm, confessors of the Christian doctrine.

What is the Yale spirit? Is it not the spirit of the beehive? I repeat the words of Maeterlinck:

"The spirit of the hive is prudent and thrifty, but by no means parsimonious. It is the spirit of the hive that scares away vagabonds, marauders and loiterers; expels all intruders; attacks redoubtable foes in a body, or if needs

be, barricades the entrance. It is the spirit of the hive that fixes the hour of the great annual sacrifice, the hour, that is, of the swarm, when those who have attained the topmost pinnacle, suddenly abandon to the coming generation their wealth and their palaces, their homes and their honey,—themselves content to encounter the hardships and perils of a new and distant country. Little city, abounding in faith and mystery and hope."

May I carry the simile further? "The bees," says the poetic observer, "have stings which they use against foes and even in fights among themselves, but they never draw their stings against the queen." Alma mater is our queen. Against her foes, against one another, we may be forced to draw our weapons, but never against the queen, *alma mater carissima.*

The spirit of Yale, a mysterious and subtle influence, is the spirit of the hive,—intelligence, industry, order, obedience, community, living for others, not for one's self, the greatest happiness in the utmost service. Virgil's words are on the hive,—*Sic vos non vobis.*

The new order, which gives to adolescence an extreme freedom in the choice of studies, may be more favourable than the old, to the production of men of letters, poets, orators, historians, essayists,—and of investigators who will extend the bounds of mathematical, physical and natural science. Nobody can tell. Everyone is hopeful. But with all their gettings, may the new generation emulate their forebears in wisdom, self-control, sound judgment, and in hearty appreciation of all that books have recorded and all that nature has revealed.

Much reproach has been thrown upon the studies of colonial days because they were mainly directed toward theology and philosophy, and because there was so little study of the natural world. It is well to reply that nature studies are the growth of the last century, since Berzelius, Cuvier and Liebig initiated the modern methods of enquiry,

carried on by Faraday, Darwin and Dana. Remember also that rigid discipline in logic and dialectics makes clear and accurate thinkers, fitted to treat the current questions of society with discrimination, perspicuity and persuasion. If our grandfathers did not excel in what we are pleased to call literature, they were taught to follow a rule of the illustrious Goethe, " to use words coinciding as closely as possible with what we feel, see, think, experience, imagine and reason." Such men were fitted to take part in the great Revolution of 1776, and in more recent wars; to be influential in the formation of the Constitution of the United States, and in the administration of justice and order in every State of the Union; qualified likewise to lead in the organisation and development of academies of science and schools of learning, defenders of the faith, upholders of right conduct, advocates of civil service reform, promoters of literature and science; and in general, trained by such discipline as they here received in mathematics, logic, history, language, philosophy, and science, to be the leading men in every community where their homes were placed.

Sic vos non vobis mellificatis apes.

BOOKS AND POLITICS

An Address on the Completion of a New Library Building at Princeton University

For several years after its sesqui-centennial was celebrated, Princeton University assembled its graduates and students near the opening of the Academic year for some special purpose. In 1898 the new Library Building was completed, and on that occasion the following address was delivered. It was a time of great public excitement, when all the questions involved in the Cuban War were attracting attention and dividing the opinions of thoughtful citizens.

XII

BOOKS AND POLITICS—AN ADDRESS ON THE COMPLETION OF A NEW LIBRARY BUILDING AT PRINCETON UNIVERSITY

WHEN Æneas, in his wanderings from Troy toward the Lavinian shores, touched the domains of Dido and saw the rising walls of Carthage, he likened the place to a hive of bees. "The work is all fire," he exclaims. "A scent of thyme breathes from the fragrant honey." As he looked upward to roof and tower, his soul was filled with envious admiration, and these were his words: "O happy they whose city is rising already." With a like exclamation I salute this fortunate university. Its ample campus, its engaging prospects, its historic associations, its spacious halls lead me to repeat the Trojan's exclamation:

> O fortunati quorum jam moenia surgunt,
> Æneas ait, et fastigia suspicit urbis.

Among these rising walls it is the Library which claims attention to-day;—the Library, latest and best of the structures surrounding Nassau Hall. Latest, I say, not last, for imagination already pictures other halls upon this campus; best, not in the least to disparage this theatre, that chapel, those fraternities, that museum, these dormitories,—the best because the Library of a university is its very heart. If the heart is weak, every organ suffers; if strong, all are invigorated. Its impulses send nourishment to every nerve, sinew, and muscle. True it is that stone and wood, however ornamental, do not make a Library,—nor does a heap of books, hoarded by an antiquary in some dark loft, ill-arranged,

inaccessible and laden with dust. Choice materials well administered in a fitting hall, are the two essentials.

Those who have watched, amazed, the remarkable transformation of American seminaries during the last quarter of the nineteenth century, may ask what is to be, in this land, the university of the future. Who can cast its horoscope? Certainly I cannot. Yet without question the Libraries and Laboratories are to be joint sovereigns,—libraries which treasure the archives of the human race, laboratories which open the arcana of nature; and it is safe to say that the university of the future, even more than the university of the present, will be controlled by three factors,—teachers, instruments and books.

The old idea that a library is a place to go and get something to read, has given way to the new idea that it is a place for study. Panizzi's injunction might be written on its walls: "I would have this place so convenient and so complete that no private person however rich can own its equivalent." To this might be added as the law of Nassau Hall,—"Every librarian must be a professor; every professor must be a librarian." That is to say, every person in charge of the university collections must be a student, capable of teaching. His specialty must be bibliography, or, if the staff is large, some branch of bibliography, literary, historical, philosophical or scientific, and he must know not only what his collection includes, but what it needs. Likewise, every professor must know the printed apparatus of his own department, so that he can be an assistant to the Librarian, as well as a guide to the adolescent scholar. By this joint action of the expert bibliographer and the alert investigator, good libraries are built up.

Four functions of a public or collegiate Library,—sometimes kept distinct, usually more or less combined, should always be borne in mind.

The first is circulation, the loaning of books for private

use,—a popular, an indispensable service, to which alone the early American libraries were usually restricted.

The second is storage,—the accumulation of everything printed,—good, bad and indifferent,—because some day it may be wanted. Like the contents of a farmer's garret, you may say; yet you should also say that to this conservative function, the great libraries of the world are consecrated. Without such store-houses the great histories and biographies of modern literature could not have been written.

The third function is reference. This term was the favourite expression of the last generation, when Astor, Lenox, Peabody, and other founders endeavoured to lift the library above the plane of circulation and entertainment, and even of storage. They sought to bring the public library within the range of scholarship, and we are grateful heirs of their endeavours.

Finally, libraries are now recognised as places of research, a higher function than that of reference. This marks a great advance quite in accord with the dominant spirit of enquiry and investigation. Here comes in Justin Winsor's law,—"A book is never so useful as when it is in use," and the necessary corollary that every possible effort must be made to facilitate the use of books. Hence the university of the future is bound to develop and augment its facilities for literary research. Literary seminaries must run parallel with scientific laboratories; or, to use a better phrase,—in the university of the future, these two kinds of working rooms must be equally maintained, equipped, adapted to special needs, and made light, quiet and convenient for study.

A little reflection will show that the world has never been so well prepared as now for the use of the past experience of mankind; never were the lessons of remote antiquity, or the origin of our fundamental conceptions of religion and politics so clear; never were diplomatic negotiations so quickly removed from the seal of mystery and privacy; never were the

intimate records of cabinets and sovereigns so freely made public; never were the long series of historical monuments, and other *mémoires inédites,* so accessible; never were biographies of great leaders so amplified,—Napoleon, Goethe, Gladstone, Bismarck; never were the auxiliary index-makers so accurate and painstaking; never was periodical literature so inquisitive, suggestive, and comprehensive; never were students of history so numerous or so well disciplined; never were great collections from the Tiber to the Potomac so open as now.

Let me draw from current affairs some illustrations of the highest service that libraries can render to the community in which they are placed. Go to the Brooklyn Navy Yard and ask leave to visit a battleship or armed cruiser. Place yourself, if permitted, under the guidance of a naval officer. Listen to his story of how the ship was designed, constructed, protected, armed, equipped, navigated, carried into action, and brought out of the terrific fire unscathed and victorious. In the aggregate and the detail you will see the results of applied science more impressive than any of the seven wonders of the world. As illustrations of human power, the pyramid of Cheops, the dome of St. Peter's, the great bridges, the continental railways, the Eiffel tower take a secondary rank when compared with a battleship. Every branch of physical science has contributed to naval architecture. Mathematics, mechanics, electricity, chemistry, metallurgy produced the tremendous enginery of the Oregon, able to ride upon stormy waves and encounter the cyclone unharmed, double Cape Horn without replenishing its coal, discharge its explosives with consummate accuracy, destroy the enemy and protect the lives and limbs of officers and crew. Whence is this applied science derived? From thousands of years of research and record. Mathematics begins with theorems as old as Euclid; steel with the earliest extraction of the ore; the luminous electron of primeval men was the dawn of electricity; so, in every

department, the work of many generations has accumulated. And where is this knowledge stored up? It is perpetuated and augmented in libraries; it is taught in colleges, schools of science, and naval academies; by its acquisition "the man behind the gun" is disciplined in accuracy, coolness, memory, ingenuity, judgment, and intellectual strength.

Pass from the domain of science to that of history. You are more or less familiar with the Venezuelan incident of three years ago. Certainly a distinguished graduate of Nassau Hall, now resident in Princeton, knows more about that stirring episode of United States History than anybody living—except, perhaps, that learned and masterful publicist who held the portfolio of foreign affairs during the later years of the last administration.

But let me tell you of some details that have never been made the subject of public comment. By the authority of Congress, the President appointed a commission to investigate a disputed boundary which had been for many years the basis of an irritating controversy between Great Britain and Venezuela. Incessant correspondence, in which the United States had taken a principal part, brought no conclusion. Of the merits of that prolonged negotiation I shall not speak,—nor of its history, nor is it possible to forecast the decision which may be given by the court of arbitration and adjustment that is soon to meet in Paris. My simple purpose is to show the method of enquiry which the commission pursued, as an illustration of the value of libraries and of trained researchers in the prosecution of a governmental enquiry.

To this commission, when they first assembled, it was clear that their task involved an historico-geographical enquiry, antecedent and leading up to an application of public law which could only be made when the facts were ascertained. These legal aspects of the controversy were safely entrusted, and without hesitation, to three eminent jurists who were

members of the commission, but the development of the facts was prerequisite to the formation of an opinion. An accomplished secretary was ready to do his part, and two university presidents, not unfamiliar with the methods of historical and geographical research, aided their colleagues by their experience. But where was the material to be found from which a summary of the truth could be derived? The governments of Great Britain and Venezuela presented elaborate memoirs; but they were not exhaustive. What discrepancies could be found, hidden or obvious? What was the origin of certain conflicting statements? Which of the existing maps were original, based upon actual survey or territorial visitation, and which were more or less imperfect reproductions and adaptations by editors who were irresponsible or careless? Libraries contained the answers—and diligent search was instituted at once. To present the information thus to be acquired in a shape that could be readily understood, a map of the region involved must be first compiled. An expert cartographer of the U. S. Geological Survey examined the collections which were readily found in the Library of Congress, the State Department, the Geological Survey, and the hydrographic bureau of the United States Navy, and at length he produced what, with many imperfections, is probably the best physical map of Venezuela that has ever been drawn. It will some day be superseded by topographic surveys, but not for many years to come. This, however, was not enough. Everybody knew that in Harvard there was an extraordinary collection of maps bought many years ago, and that they were in charge of a learned interpreter, now, alas, no more. He was at once enlisted. In the Lenox Library of New York, and the American Geographical Society, other charts and books were discovered. Then, to everyone's surprise, word came that in Madison, Wisconsin, there was a rare collection of Dutch authorities, which must be examined. For the handling of

this varied and comprehensive material, an historian of Brown University and a linguist of Johns Hopkins were called in. Meanwhile, the remarkable abilities of an historical bibliographer at Cornell University were remembered, and he was sent abroad to investigate in the archives of Holland, and subsequently in those of England, dubious points, particularly involved in the succession of England to the rights of Holland in Guiana. Then another interesting enquiry arose respecting the progress of Roman Catholic missionaries in the heart of South America, and through an influential personage access was gained to the lore of missionary brotherhoods reporting to the Vatican. From these sources, a standard atlas showing the historical development of a vast area was compiled and published. With it were four volumes of text. All this will be presented, as impartial evidence, to the international court which is called upon to adjudicate this complex, important and wearisome controversy. The Venezuelan Government has reproduced as part of their evidence for that court very many of the maps thus set forth.

You must admit that this story shows how useful the libraries and professorships of this country have been in a crisis that came very near involving three countries in war.

By these examples I have been leading up to the principal theme of this discourse,—the relation of books to politics, or in other words, to the attitude appropriate to scholars in the perplexities which now involve our countrymen.

Since that anxious period in the history of the United States, when the articles of confederation led up to the Constitution, there has been no time when it was so important to study, proclaim and enforce the lessons of history. Not only our welfare, but that of unnumbered, impoverished and half-enlightened islanders will be affected by the policy which will soon be formulated by our government. It may help us to appreciate these imminent responsibilities if we make a rapid survey of the globe in this anxious hour.

Count the summer only, from the time when the sun crossed the equator in his northward course until he returned thereto, and is it not the most remarkable summer of American history since the summer of 1776, not excepting that of 1863? Take a broader view, and will you not admit that in events and consequences it is one of the most remarkable years of history since the days of Napoleon? Consider the chief events. The world has been shocked by the death of an Empress at the hand of an assassin. Two world-renowned statesmen, who through their long careers in England and Germany, wielded the powers that were almost supreme, have joined the immortals. Another, almost equally eminent in the Chinese empire, has been deposed from his high office, then reinstated. The Empress mother appears to have assumed the prerogatives of the Emperor, who is said to be incarcerated. Meanwhile, through the Celestial Empire, the supremacy of European civilisation is rapidly advancing. An Imperial University under the leadership of a gifted American has been inaugurated. Railroad concessions have been granted to foreign capitalists. Russia, England and France are on the alert, and, if actual war upon the Chinese coasts or within the borders has been averted thus far, the low rumblings of Poseidon, the earth-shaker, have been heard,—rumblings of jealousy and rivalry not likely to be suppressed by the doctrine of "spheres of influence" in the partition of China. The confinement of a solitary prisoner on a dreary islet fitly named "The Devil's," has led to revelations which are shaking the stability of the Republic of France and have endangered its relations to other governments. Germany and England have come to a peaceful adjustment of their respective claims upon the Eastern Coast of Africa. British arms, with unparalleled skill,—a triumph of military science,—have beaten the Dervishes; planted the cross of St. George on Omdurman-Khartoum, where the Khalifa's black flag had been waving

since the death of brave General Gordon; freed the upper valley of the Nile, and opened thus a passage to the lakes of central Africa, there to meet, ere long, an opposite current coming northward from the Cape,—all this prognostic of English supremacy, in the interior of the dark continent, from the delta at Alexandria to the settlements of Cape Town. The unexpected appearance of the forces of France at Fashoda has caused a temporary, perhaps a serious, embarrassment. The Emperor of Russia, Nicholas the pacificator, successor of Alexander the liberator, has called for a conference of the European powers looking toward disarmament, and the responses if not conclusive are hopeful. England and America, without a formal alliance, have engaged in the peaceful settlement of such open questions as pertain to the continent of North America. More than this, mother and daughter have been drawn more closely together than they ever have been since the colonial tie was severed, drawn too by sentiments stronger than speeches or than language, stronger than arms, stronger than treaties,—strong in the consciousness of kin and the equal inheritance of institutions and ideas, religion and law.

All this in the old world; turn now to the new. For the first time, in half a century, the United States has engaged in a foreign war,—the war of one hundred days. Never have her young men shown more patriotism, more courage, more endurance, more strength. A quarter of a million brave defenders have rallied round the flag. Southerners and Northerners have stood side by side once more together, brothers in arms, as they were at Cowpens and Yorktown, a blessed sign of complete reunion. Sectional animosity has disappeared. In this vast army, *mirabile dictu,* less than three hundred men were reported killed by sword and ball. Our victorious fleet, the white squadron of peace, has demonstrated not only the supremacy of naval power, to which Captain Mahan had been calling the attention of

the world, but it has also shown the abilities of our countrymen in devising, constructing, and handling these giants of the sea, while with consummate accuracy the range has been determined, the guns sighted, and huge projectiles hurled on their destructive mission. In one memorable morning, the hands of Spain were released from their grasp upon the pearl of the Antilles, and soon, when the ashes of Columbus return from Havana to Seville, *requiescant in pace,* her supremacy will have vanished from the lands that Columbus discovered, from a domain that once extended from the heart of North America to the heart of South America and over the intervening seas.

The bravery of our seamen, never questioned since the days of Paul Jones, has been demonstrated again in the handling of new engines of battle, the floating forts. At the same time, the unfailing and spontaneous generosity and courtesy of officers and seamen, toward a conquered foe, in the moment of exulting victory, has brought out the world's applause. "Do not cheer," said the commander of a vessel on which a fallen crew was received. "They were our enemies; we have beaten them, and they are now our friends." The consideration of the Spaniards for brave Hobson and his men was not forgotten when gallant Cervera and his colleagues arrived upon our shores.

Nor is this all. In the distant Philippines, first the navy alone of the United States, then the navy and army together, achieved great victories and placed in our possession the control of that great island group. The Ladrones yielded without a contest. It was one of the humours of the war, caught up by a gifted story-teller, that the Commandant of Guam apologised for not returning the American salute because of the want of proper ammunition, and was astonished to find himself on the way to Manila as a prisoner of war.

Meanwhile, Hawaii, conquered long ago by the peaceful agencies of civilisation, has been annexed to the United

States, "for better for worse, for richer for poorer, till death us do part." It was a pathetic scene when the Stars and Stripes arose above the government house in Honolulu.

We have had our financial as well as our military and naval victories. The cry of the silver dollar, not silenced, is muffled. A popular loan called out from the people, without the mediation of bankers, an offering seven times as great as the treasury wanted.

It is needless to recapitulate the sequence of stirring deeds performed in our united service, for they have been made familiar to everyone, in marvellous reports, written in the din and peril of the battle-field, and on the decks of ships in action, by brave and gifted writers, whose keen observation, accurate memories, translucent style, and immediate transmission of the news by boat and wire have glorified the profession of newspaper correspondent, and enabled the people to follow day by day, almost hour by hour, the stirring actions of our admirals and generals. Nor will I name the brave and gallant leaders whom you would be so ready to applaud, nor recount the thrilling stories of those private heroes, not named but not forgotten, who endured hunger and thirst, faced the bullet and the shell, or were prostrated in loneliness and pain by the more destructive arrows of pestilence and fever.

The part that women took by the agency of the Red Cross, and by other agencies, in promoting the health and relieving the distress of those who were serving their country, can never be forgotten, nor be mentioned without awakening a sense of the deepest gratitude to these followers of Florence Nightingale.

We are now involved in the less exciting, but not less important, problems of peace. Able commissioners are engaged in Paris in the definition of the Spanish-American protocol. At home, investigations respecting the conduct of the war are in progress, and especially respecting the san-

itary care of the army; the settlement of conflicting claims and the bestowal of well-earned laurels likewise exact attention; but above these problems, important as they are, there rises one transcendent question, a question without a precedent, involved in detail, world-wide in its significance. You anticipate my meaning. The great problem that is now before the country is not the relation of Admiral to Admiral, of General to General, or Secretary to subordinates; nor is it the merit or demerit of congressional action in the declaration of war; nor is it the possibility that Cuba might have been released from Spanish control by a continuance of the President's diplomacy, which at one time was so hopeful. Such enquiries may be relegated to history. But the question of to-day, the question of the decade, it may be the question of the twentieth century, is the attitude of the United States toward the islands of the sea, *de insulis nuper rupertis*. This is a question for universities and university men to illuminate by the experience of mankind. Unquestionably the President and Congress, upon whom the ultimate responsibility will rest, will give to the problem the full consideration which it demands, but it is quite possible that their conclusions may be influenced by studies pursued in the libraries of Princeton and other learned institutions, and by publications set forth by their printing presses. Public opinion is forming. Speeches, pamphlets, resolutions, political platforms, magazine articles and books are following each other in quick succession. A bishop on the one side is answered by a bishop on the other; a scholar, by a senator; party utterances are confounded; the discreet are careful what they say while the indiscreet pronounce offhand what the country ought to do.

In considering the task of the United States, let us be reminded that in the evolution of this period of modern history, the underlying fact is this,—the nations claiming to be civilised are engaged in the subjugation of those that are

not. It is almost equally important to remember that the revolutions now in progress, peaceful and war-ful, are due to many co-operating forces, four of which are noteworthy: —the rapidity of communication by electricity and steam, annihilators of space and time; the growth of manufactures and commerce demanding new markets; the improvement of munitions and armaments, especially those of naval warfare; and finally the increase of education and enterprise, arising from the growth of science, and an eagerness to subdue the earth.

It would be instructive to review the progress of continental empire during the nineteenth century in North America, Africa, and Asia, but it is Oceana with which we are chiefly concerned. Think of the achievements of less than a century. England has created great states in Australia; New Zealand in less than sixty years has abandoned barbarism for civilisation; the Fijis, in the same period, have become Christianised, and the seat of England's power in the Pacific; Tahiti is French; Samoa is under the joint protectorate of Germany, England, and the United States, where Pago-Pago will soon be our harbour of refuge; the Hawaiis are now an American territory; the Ladrones are held, at least for the present, by right of conquest, and the Philippines are in chancery.

In this period of changes it is clear that the United States, because of its geographical position, must of necessity be a mediator between Europe and Asia, if it be only as a carrier of methods, merchandise, and men.

Not long ago, upon this campus, there lived and walked one of the broadest and most thoughtful of scientific philosophers. He printed but little, or he would be better known, but that little made a deep impression upon his generation. Surely in this place, his persuasive voice, calm spirit, great learning, accurate knowledge of Earth and Man are held in such honour that his words, which sound like

the voice of a Hebrew prophet, may be fitly recalled. He taught us, I remember, as Humboldt and Ritter had taught him, that every portion of the globe is fitted for the service of the human race, as the body is the temple of the soul. He reviewed the progress of civilisation in America, Asia and Europe. He looked forward to the approaching conquest of the Ocean, and to the opening of Eastern Asia. "Yes, gentlemen," he said before the Lowell Institute, in 1849, in a lecture on the People of the Future, "a new work is preparing, and a grave question is propounded. To what people shall it belong to carry out this work into reality? The law of history replies, To a new people. And to what continent? The geographical march of civilisation tells us, to a new continent, west of the Old World,—to America." And again: "The oceanic position of the American continent secures its commercial prosperity and creates at the same time the means of influence upon the world. America is so placed as to take an active part in the great work of the civilisation of the world. In what measure and through what perils it shall be given to mankind and to America in particular to attain the goal is known to God alone." These were the words of Arnold Guyot.

I do not purpose, on this academic occasion, to discuss a question upon which wise men are widely divided, eager as I am for the opportunity to do so. Such prudent reserve is justified by the fact that a board of ten commissioners is now in Paris engaged in determining the conditions of peace; the additional fact that Congress has had no opportunity for debate upon the conduct and results of the war; and the third fact that the President, in whose wisdom and patriotism the country places the utmost confidence, has given no public sign, with all possible information at his command, of the attitude which the administration will take in respect to our new relations. This extraordinary uncertainty brings to mind a celebrated chapter in Montesquieu's "Spirit of

the Laws." In that famous treatise, (to which the present generation might well turn for guidance, as their fathers did at the beginning of our constitutional history), a work where one hardly expects a laugh, every word of the fifteenth chapter of book eighth is as follows: (Caption.) *Sure methods of preserving the three principles.* (Text.) *I shall not be able to make myself rightly understood, till the reader has perused the four following chapters.* So Americans must await the following chapters of their history before they can understand the one through which they are passing.

I am not an "imperialist," an "expansionist," nor a "jingo." I belong to a class of citizens, represented, no doubt, by many in this assembly, who dread revolution, trust experience, and are established by inheritance, training and reflection in the belief that the freedom of this country from foreign entanglements has secured its peace and plenty, and is the basis of its hope and faith. I say now, as I said in June, that it is safer to walk in the footsteps of the fathers than to enter upon the dark and hidden paths of the forest, which lead we know not where.

Nevertheless, is it not apparent that the events of 1898, following in quick succession, like the bombs from the turret of a battleship, have changed the outlook? If public opinion, manifest by the newspapers, expressed by speeches, pamphlets and resolutions, and presently to be formulated by Congress, demands that our acquisitions remain our possessions, the Americans have reached the most serious difficulty in government that has arisen since the Constitution of the United States was adopted,—reconstruction, perhaps, excepted, though of this I am not sure. Such a state of affairs was not foretold by optimistic or by pessimistic prophecy. The political results, as distinguished from the military and naval, have been adverse to the wishes, arguments and anticipations of conservative men. But here we are, in circumstances unforeseen when the Constitution was

adopted, when the farewell address was written, or when the Monroe doctrine was announced, or even at the declaration of war with Spain.

Whatever we may think of the annexation of Hawaii, or of the value of Porto Rico, or of the wisdom of the recent war, or of its necessity, or of the terms of the protocol, or of the perplexities in which this country is involved, here we are, face to face with new problems, new responsibilities, new opportunities. They are not ghosts and spectres which will vanish as we approach them, they are giants tough and grim, armed with clubs, and full of deceit,—with which we shall have many a rude encounter before we prevail.

Here we are.

Emerson, in his Essay on "Race," says of the English that they derive their pedigree from such a range of nationalities that there needs sea-room and land-room to unfold the varieties of talent and character; but he quickly proceeds to tell this story: "Charlemagne, halting one day in a town of Narbonnese Gaul, looked out of a window and saw a fleet of Northmen cruising in the Mediterranean. They even entered the port of the town where he was, causing no small alarm by the sudden manning and arming of his galleys. As they put out to sea again, the Emperor gazed long after them, his eyes bathed in tears. 'I am tormented with sorrow,' he said, 'when I foresee the evils they will bring on my posterity.'" "There was reason," adds Emerson, "for these Xerxes tears." So it is with every thoughtful American with whom I have conversed. We foresee the evils that posterity will suffer from the events of 1898.

For this state of affairs we are wholly unprepared. If it is true, as a member of the Cabinet has said, that war came like a flash of lightning out of a clear sky, and as the President afterwards affirmed, that "the storm broke so suddenly that it was here almost before we realised it," it is

equally true that the nation is not ready for the new problems of civil government upon which it is entering. Reduce these problems to their lowest terms. Near by, Cuba, freed from the sovereignty of Spain, is ours for the moment by conquest, and yet it is not ready for self-government, nor will it be for a long time to come. Porto Rico and other Spanish islands are ours by the terms of the protocol, and are equally unprepared for republican suffrage. In the Pacific, Hawaii is ours by annexation; an island in the Ladrones is guaranteed to us by the protocol; we are in possession of the harbour, bay and city of Manila; and with Germany and England we are joint protectors of Samoa, where Pago-Pago is already a naval rendezvous. Nor should we forget that if none of these acquisitions had been made, our influence in the Pacific would still be very great. Our merchants, missionaries, travellers, men of letters, artists, scientists, are bound to traverse Oceana. American influence is sure to be felt in Australasia and Eastern Asia. We once made a call upon Japan and behold the results.

From this influence there is no escape. The question is how best to use the advantages of our position for the good of mankind. The Chinese policy is to remain shut up within a wall, repel all assault, and refrain from interference with the affairs of other people. Shall the Americans, abandoning the opportunities that have been placed in their hands, maintain a similar seclusion and be contented with coaling stations; or shall they establish themselves as a civilising force in the Pacific?

I purposely refrain from dwelling upon our commercial relations, but they must not be passed by with a contemptuous remark about pecuniary greed. It is right to condemn cupidity and avarice; yet the free and enlarged exchange of the products of one clime, or one State, for those of another, is among the highest achievements of civilisation. Commerce has been the making of England as truly as it was the mak-

ing of Phœnicia. International trade is the business of the United States by which our own welfare and the welfare of all people with whom we have to deal are promoted. Let commerce be stopped, and all the mechanism of modern society is brought to silence.

From this broad survey I return to this peaceful campus, and enquire: What is the duty of American students in this new state of affairs? That is the question for us to consider. We are not members of the Cabinet, nor of Congress; we are not Peace Commissioners; we are only a company of students and teachers. What is our duty? My answer is a very simple one. Let David get ready to meet the Philistine. Let him gather the pebbles for his sling. Go to your books, young men, and study geography and history. Resort to the Library by whose reorganisation you are now enriched. Begin the study of Oceana, its vast extent, its marvellous attractions, its extraordinary people, its primitive customs, its amazing institutions, its adaptation to civilisation. With your geography, do not fail to read political history. Trace the steps which great nations have taken in dealing with primitive people. Weigh the consequences of conquest, bigotry, falsehood, greed and lust. Weigh also the benefits of consideration, honesty, education, justice, religion, and law. Follow the slow and devious ways by which the principles of civil and religious liberty, which we hold dear, have been evolved, and derive if you can the laws by which a like evolution may be secured among other people. Remember that the most enlightened nations are not yet perfect in governing themselves, and are very inexpert in governing others.

Four centuries of experience in the transmission of modern civilisation are now of record. Spain has given the world an object-lesson which has reached its last chapter, and Spain has shown what miserable result may follow from bad laws, bad customs, and bad institutions. The states

of Central and South America are the examples of her best influence; Cuba and the Philippines of her worst. Portugal, once enterprising, has her lessons in decadence. The Dutch have tried their hand in the maintenance of distant colonies; and Java tells the tale. France has her manifold possessions in the Orient, and if Tahiti is not a fair illustration of her influence, look at Algiers, Tonquin and Madagascar. England is pre-eminent in colonial supremacy. Her ability in governing a distant empire, especially as shown in South Africa, in Egypt, and in India during recent years, is wonderful. Russia, France, and England, to say nothing of Germany and Japan, now have their hands upon China, and no one can predict when an Eastern war will be declared, or what will be the issue.

In respect to island life, the records of the nineteenth century are especially full of important and appropriate lessons. For example, see how the convict station of Botany Bay on the confines of a small continent, inhabited by cannibals, has expanded into a group of prosperous states. Read the story of the American Exploring Expedition, under Wilkes, who happened to be in New Zealand when Great Britain took hold of the islands in 1840, and went away recording in his narrative, "There is nothing here to interest us"; and then turn to the newspapers and books of 700,000 Europeans established in the double island, with churches, schools, banks, agriculture and commerce. Follow the Hawaiians, from the murder of Captain Cook to the acceptance of American sovereignty,—a history of missions, education, science, agriculture and trade. The geographical literature of Polynesia or Oceana is rich, and the pages of Phillips, Mariner, the two Danas, Froude, and Stevenson, and a hundred other writers, are like the chapters of a romance or the scenes of a great drama; while the series of voyages from Cook to the *Challenger* are rich in the facts of ethnography and geography. Study the West Indies, and con-

trast the beneficent life of Jamaica and the Bermudas with the dire stories of Hayti and San Domingo, Porto Rico and Cuba.

It does not follow that if distant islands come under the dominion of the United States, the inhabitants of these islands are at once to be admitted to the privileges of self-government. The process of training must be gradual and will probably be long. Doubtless, in each case, the procedure will differ from that of every other case, and difficulties, various and complex, will be presented; but certainly modern civilisation is adequate to the task of perpetuating and extending its influence among the islands of Oceana, by introducing the fundamental principles of political well-being. The principle that government depends upon the will of the governed is not of universal application. There are constant conditions in which authority must be exercised over those who are incapable of governing themselves. It is as true of nations as it is of individuals that they must learn the art of self-government. Democratic institutions may be partial and gradual as well as complete.

To discuss elaborately these questions is an appropriate task for the universities of this land. They have the historical and geographical archives; they have trained investigators; they know the principles of human progress; they have the knowledge of constitutional law and historic jurisprudence. They are non-partisan. They have scores and hundreds of skilful coadjutors whose services can be enlisted. What a service they might render by combining their forces and distributing their tasks, to teach the world, in the light of history, how it is that great nations have failed in the business of advancing civilisation and how other great nations have succeeded; what constitutes a legitimate and humane exercise of superior force, and what is base or disastrous. A word from the President or a request from the Secretary of State would set the universities at work. It

would be better still, if Congress would authorise the appointment of a commission to be made up of the most learned, the most wise, the most experienced statesmen of the land, not now holding public office, and charge them to investigate for years to come, these problems. History, said Freeman, is past politics, and politics present history. What nobler work could a civilised nation undertake than to study its present in the light of the past, calmly, leisurely, and under conditions which ensure wise conclusions, full of instruction for mankind. A commission, made up of jurists, students of international law, economists and historians, could bring together, arrange, digest, and make known the conditions of success and the conditions of failure, and thus prepare the way for such legislation or for such Constitutional amendments as will enable the government of the United States to administer for the good of humanity its new responsibilities in the islands of the sea.

I am well aware that there are many of our best counsellors who dread to have our countrymen entertain these questions. We are "too corrupt," they say. "If we cannot govern Manhattan why undertake Manila?" If we are embarrassed by eight millions of Africans, speaking our language, voting for our rulers, and fighting with our armies, what can we do with eight millions of Malays, to say nothing of half-breeds? But I have confidence that if in the progress of events these responsibilities are imposed upon us, we shall rise to the opportunities. I appeal to English history. How short a time it is since seats in Parliament were bought; since commissions in the army were openly purchased; since the only civil service was favouritism and "pull." See what a century of increasing responsibility has brought upon Englishmen. We are of their stock. I appeal to human nature. How readily trustworthiness is fostered by responsibility.

In the latest history of John Fiske's you may read that

at the end of the last century it was claimed that, "in the mournful chorus of disparagement" evoked by the discovery of America, "the one cheery note" was the introduction of quinine. You may also read in the terse and vigorous phrase of a century later that the great historic fact, most conspicuous among the consequences of the discovery of America is this, that the colonial empires of England and Holland, fraught with civil and religious liberty, grew directly from the repressive war with Spain. "In the conflict of Titans," he says, "that absorbed the energies of the sixteenth century, the question of whether it would be the world of Shakespeare or of Calderon that was to gain indefinite power of future expansion was a question of incalculable importance to mankind."

Human progress is usually heralded by fire and sword, hunger and thirst; our Civil War cost many hundred thousand lives; the War of Independence was a seven years' war, and the cup of separation was full of bitter herbs; the colonisation of the New World by England required a century of privation and poverty; and so I might go on, but there is no need to do so. History warns us that in our new career we may anticipate perplexities, embarrassments, blunders, a neglect of the principles of efficient civil service, the rivalries of churches, the wasteful and perhaps the fraudulent expenditure of vast sums of money, and attempts to engraft the system of spoils on the unsophisticated and unwary. I dread the conflict. Nevertheless, I believe that the American people, through their errors, perplexities and sins, will rise to the situation before them, and will succeed in carrying to distant lands the benefits of liberty, order and law; and I believe that the young men of our universities, to whom the great storehouses of human experience are open, while they point out in the history of Alexander, and Cæsar, and Charlemagne, and Napoleon, the dangers of imperial magnitude, will also show us how in the twentieth century

these dangers may be to a great extent averted, and human happiness be advanced by spreading through the world the principles of Anglo-American liberties.

Fathers and brethren, let us not forget the words of Emerson, "The scholar is the man of the Ages." Let us not shrink from the responsibilities, whatever they may be, that Providence puts upon us; but with the courage that inspired our young men last spring as they left the farm, the shop, and the counting-room, the college and the university, the bar and the pulpit, when the government called for support, let us volunteer for the longer, harder, more intricate contests that are coming, contests not of muscle, but of brains. Let the libraries be our armouries where we may be equipped. Let us be taught by the experience of England, of China, and of Spain. Let the reproach never rest again upon the educated young men of America that they do not participate in political action. Let them be leaders in the battles of the future, whether they command the squadron or carry to the guns the powder and ball. Let them not forget that the measure of history is not a day or a month or a year or a decade, but a century. The measuring-rod of a hundred years is the smallest gauge by which men mark the progress of great events. To the supreme intelligence, a thousand years are but as yesterday.

Be it forever remembered that we are the heirs of great possessions that we may not keep to ourselves. This is an inventory of our rich inheritance:

1. The good tidings of Christianity, destined to pervade the earth with its pure and simple morality.

2. Civil and ecclesiastical liberty, secured by many contests, from Magna Charta down.

3. International law, propounded by great jurists and accepted by great states.

4. Freedom of commercial intercourse by which the prod-

ucts of nature and of industry are exchanged for the mutual benefit of the producers, with the least restriction possible.

5. The purity and happiness of domestic life, an idea almost unknown to savage and half-civilised men.

6. The value of general education, with a growing appreciation of history and literature.

7. An increasing and beneficent harvest of scientific investigations, by which happiness is promoted, life prolonged, pain destroyed, and time and space are overcome.

It is highly probable that the young men of this university will soon be personally involved in the perplexities that have arisen from this war of one hundred days. They are likely to be engaged, in one capacity or another, in relations with distant and unenlightened islanders. At least, as citizens of this republic they will be concerned in the adjustment of American institutions to circumstances and people for whom they were never designed. For these new responsibilities they should be prepared by an acquaintance not only with geographical, ethnographical, and historical facts, but with the principles of economics, of administration, and especially of public and constitutional law. I urge them to make ready for the duties of the Christian citizen in the twentieth century,—to prepare for foreign affairs by the promotion at home of sound finance, pure religion, and political education.

The methods of modern England, not Spain's, should be an example if it be true, as Mr. Benjamin Kidd in an impressive paragraph has declared, that England's success in India is due to the influence of her universities. "In other words," he says, "it is the best and most distinctive product which England can give, the higher ideals and standards of her universities, which is made to feed the inner life from which the British administration of India proceeds." "Progress upwards," he continues, "must be a long, slow process, must proceed on native lines, and must be the effect

of the example and prestige of higher standards rather than the result of ruder methods. It is on a like principle that the development of the tropical region occupied must be held to be the fulfilment of a trust undertaken in the name of civilisation."

You are the heirs, Princetonians, of illustrious names, none so illustrious as that of James Madison, whose constitutional services are acknowledged of transcendent importance. Be his pupils as you are his followers.



CALIFORNIA REVISITED

An Address Delivered in Berkeley, October 25, 1899, at the Inauguration of President Wheeler



Professor Benjamin I. Wheeler was chosen President of the University of California in 1899, and in the name of the Trustees he invited me to be present at his inauguration, which occurred twenty-seven years after I had been placed in the same position. On the beautiful campus at Berkeley, thousands of persons were assembled, and in the open air, toward the end of the afternoon they listened to the following remarks.

XIII

THE INAUGURATION OF PRESIDENT WHEELER AT BERKELEY, OCTOBER, 25, 1899

Mr. Chairman and Gentlemen of the Board of Regents and Faculty; Ladies and Gentlemen:

It is a great delight to stand once more before an assemblage of large-hearted and large-minded Californians, and, if I should tell you of the emotions that are awakened at this moment, before I could close, the sun would not only disappear beyond yon grove of eucalyptus, but would sink into the Pacific Ocean.

When the distinguished scholar, whom we now salute as President of this great University, invited me, in the name of the Board of Regents, to return to Berkeley, the home of my early manhood, and to stand upon this platform, I asked him what sort of a speech would be expected, and he replied: "Tell them your own experiences after leaving California." I shall obey him, for he is in the seat of authority and entitled to the loyal response of every friend upon whom he may call for support and counsel. But before I go forward to the principal part of my remarks, let us pause for a moment to consider what this occasion means.

Every one of us, without doubt, is filled with curious anticipation respecting the new epoch. The students eager for knowledge and just awakening with the enthusiasm of youth to the charms of science and literature; the parents and friends who stand by, ready to make any sacrifice for the education of those who are dear to them; the devoted

teachers whose lives are consecrated to the development of the intellectual and moral character of those who are under their tuition; the generous givers of their plenty; the Regents, alive to their great responsibility; and the officers of the State which has so liberally dealt with its worthy offspring, —all whom I see in this vast throng, are deeply concerned in the issues of this year.

Look back only half a century and remember that fifty years ago the pioneers of '49, many of them college bred, brought to this coast the simple conception of a college as they had known it in the Eastern States. Some of them were sure that the charm of knowledge was in the past, and that the traditional curriculum was the royal road to knowledge. Others were certain that in "this new world beyond the new world" (as Charles Kingsley called California many years ago in his speech on this site), new problems demanded new methods of solution. One of these pioneers, Henry Durant (the gentlemen on the platform will remember him) came, as he said, "with college on the brain," and he builded better than he knew. Another, Frederick Billings, came with his eyes dazzled by the vision of Berkeley and his ears ringing with the familiar quatrain which predicts "the course of empire," and secured our name. All these and other pioneers, as they planned and as they delved and planted, were persuaded by the experience of centuries (although they did not always say so), that "wisdom is better than gold, yea, than much fine gold."

Advance the record five and twenty years to 1873. The College of California, founded by the men whom I have named and their associates, has expanded into the University of the State; the restricted plot in Oakland has been exchanged for these broad acres, looking out to the Golden Gate; the grounds are consecrated to the higher education with speeches from Governor Booth and Bishop Kip, and by the graduation of the first of that long file of departing

scholars, never to be concluded, whose academic life is associated with Berkeley.

A quarter of a century after the exodus, and half a century after the creation, we are now witnesses of the dawn of another epoch. It is under these circumstances, that a veteran who has bathed in the fountain of youth, comes forward to congratulate the University of California on this auspicious day, as rich in memories and achievements as it is in promises and prospects.

I congratulate you on the succession of great gifts, which have supplemented the appropriations of the State, and upon the development of great principles, which have attracted to this place throngs of young men and maidens in the pursuit of a liberal education, while other students have been enabled to secure in San Francisco their professional training in the legal and medical sciences and in the fine arts.

With heartiness for which no tones can be too emphatic, I congratulate you on the far-sighted munificence of that generous woman whose hope it is that the buildings of this university shall be worthy of its aims, and who desires that they shall not be constructed hap-hazard, as in other places the usage has been, but comformable to a plan, selected by fair and well-trained judges from plans submitted to them by accomplished architects of Europe and America; and who has determined by her own munificence to set an example that others may emulate. May her purpose be as fruitful as the gift of Devorguila, early benefactor of a great college in Oxford; and her name be held in gratitude and admiration for centuries to come.

I congratulate you that you have chosen a President, as did the authorities of Leland Stanford University, from among scholars who have breathed the inspiring atmosphere of Cornell University. It is indeed propitious that these two California presidents, President Wheeler and President

Jordan, divergent in their studies, yet single in their aims, have drunk from the fountains of Ithaca, which were opened by one whose love of historical studies is paralleled by his devotion to science—that scholar, teacher, statesman, and peace-maker, now our minister in Germany, Honourable Andrew D. White.

Few persons know, as I do, what a persistent, sagacious, and sensible search the Regents have been making for a President. If they were eager to give an example of original investigation, which never rests until a finality is reached—they could not have done better. But their difficulties did not end with their discovery; persuasion was harder than research. The leader of their choice had received many previous calls to which his ear remained deaf. The ties of intellectual and social friendship, the assurance that a professor's chair is stable, while a president is usually offered that which looks more comfortable, but is really shaky—in fact a rocking-chair; and the consciousness that in an old State the traditions of higher education are sure of recognition—were considerations of weight. He has wisely decided. Greater opportunities on a broader field, the generous support of the authorities, and that large-heartedness and large-mindedness which have ever been alluring characteristics of the Californians, have captured him; and now with one voice his friends in the East, his new friends in the West, bid him God-speed. Bind him with bands of steel; strengthen his hands; confirm his plans; listen to his counsel, and soon you will know, what you now believe, that the right man is here—suggestive, strong, hopeful, wise, and inspiring; ready to promote the vigour, the industries, the wealth, the literature, the science, the arts, the politics, and the religion of this great State.

This is not the sort of a speech, President Wheeler, which you asked me to make. I have indeed wandered from my theme. But I could not help it. Besides, I think that if

you are not with me, the assembly is, and that their hearts now beat in unison a welcome to Berkeley, to its cares and opportunities, to its honours and rewards.

You asked me to speak of my own observations and reflections during the period since I left California. I will do so briefly. The growth of scientific laboratories is one of the most extraordinary developments of the recent decades. Not long ago chemistry was the only science which had this adjunct. Now every department which is concerned in the investigation of natural forces demands, and in strong institutions has secured, the halls in which, the apparatus by which laws may be verified, investigations carried on, and students made familiar with the processes and methods by which mankind reveals the mysteries of nature. Even clinical medicine now calls for its laboratory. Psychology likewise. Everywhere students are now taught to use their own eyes and their own hands. The study of nature, by experiment and by observation, has established its place side by side with, sometimes a little in advance of, the study of mankind. By such studies, not often directly, but always indirectly, the great achievements of mechanical and electrical art have been secured. The methods of correspondence, travel, and commerce have gone through a revolution. Warfare has been changed, and the war-ship *Oregon* and her sisters have shown that is is possible to win great victories, over seas and over enemies, without the sacrifice of the victor's blood. Among the achievements of the nineteenth century, none is more fertile than the introduction of instruments of precision, and the employment of measurements mathematically accurate. The American laboratories, observatories, and surveys are among the best attainments of our countrymen, and justify the utterance of German observers, that the most important contributions of our country to the world are the new developments of university activities.

The expansion of our libraries and their adaptation to the wants of students have made equal progress with the multiplication of laboratories. They have become working places, where the experience of mankind is stored up, where the latest publications of scholarship are received, where youth are trained in the methods of literary investigation, and are introduced to "the friendship of books," the intimate and repose-giving, soul-refreshing, thought-inspiring acquaintance with the noblest writings of every age and every clime. The time was when the lecture-room was the only channel for such introductions; now the sagacious teacher supplements his teaching by lessons in the art of reading, which is the art of discarding the second best and choosing always the very best. With this goes the love of history and biography, so that we can readily assent to the recent utterance of an English essayist, that the glory of which no man can deprive our poor dying *siècle* is that not one, of all the others, since history began, has taken such pains to understand the centuries previous.

The natural result of these two movements is seen in this, that there is no longer, within the range of public audition, any controversy as to the comparative value of ancient and modern studies, no question as to the relative value of science and letters. All have honourable places. Consequently the one curriculum has gone; many roads are leading to Rome.

With these changes, it is interesting to note the clarification of the idea of the university. It may include a college; or several colleges; but it is more than a college, more than a group of colleges. It is the highest expression which any community can give to its intellectual aspirations; the most complex, diversified, and fruit-bearing organism which any community can devise for the intellectual or moral welfare of its people. It is a place where the latest science, the noblest literature, and the purest art are em-

ployed in the higher education of well-disciplined youth. To this clarification of ideas, an admirable contribution was made by our honoured colleague, Professor Joseph LeConte, in his essay on the School, the College, and the University.

The admission of women to the advantage of higher education is another of the remarkable changes of recent years. The methods differ. Sometimes, usually in the Western States, there is unrestricted co-education. In the Eastern States there is partial co-education, where certain courses of advanced study are open to women, but the tendency appears to be more favourable for building up separate colleges for women, often like Radcliffe and Barnard, in connection with or near to the college for men, but sometimes independent like Vassar, Wellesley, Smith, and Bryn Mawr. Each community has its own problem to solve; whatever the method, the world is sure to be the better for generously opening to women the opportunities from which they have been too long excluded.

The advancement of professional schools is another remarkably promising movement,—especially schools of law and medicine. I call special attention to the latter for the changes in the medical schools of the East within five years past are wonderful, and will surely be followed by this University. Prolonged courses of study, high standards of admission, ample facilities for observation in laboratories and clinics, rigid terms of graduation, enlarged freedom of intercourse with skilful teachers selected as the best of their profession, are among the changes that are prolific in good.

Again, I mention among the noteworthy changes of the last few years, greater liberality on the part of religious leaders towards the methods of modern thought, less apprehension, more generous sympathy when science, language, and history speak. On the other hand, it is equally worthy

of note that intellectual men, whether they be devoted to letters, science, law, or education are more and more ready to admit, not only to admit, but to declare, that the things which are seen are temporal, and the things that are unseen are eternal; that beneath all forms of worship there is a true religion binding man to his Creator; that the mysteries of life are just as great as they were in the days of Solomon and Plato. Much more than this, they believe that the discoveries of microscope and telescope, the more they are prosecuted the more they reveal a plan, and the more incomprehensible that plan appears without the belief in one living and true God.

It is delightful to hear an orthodox theologian utter these words and to believe that in the minds of most naturalists they find a loud echo:

"If a man can understand the universe in its long unfolding, it is because the universe in its long unfolding expresses the thoughts of a rational mind that is akin to the mind of man that understands it. By the doctrine of evolution the universe is for the first time consistently represented as a universe of ideas,—that is to say, as an expression of God. From of old, Christian faith and doctrine have declared it to be so; but now comes the doctrine of evolution to illustrate and confirm the declaration, so that it cannot be denied again. To deny the presence of mind in the universe is to be belated in the world of evolutionary thought. If the common man comes to a true conception of the world he lives in, he will find the day far past when he could question the presence and activity of the all-comprehending mind."

May I conclude these remarks with three or four suggestions? I speak not only to the Faculty and the Regents, I speak to all of you who in any way whatever desire to be enrolled as friends of learning; and I say, "Encourage investigation." Help everybody who is willing to engage in

such work; especially lend a hand in the development of the resources and industries of the State.

Bring hither all the experience of the human race in ancient and modern times that the seed may be sifted out and planted and the chaff rejected and burned. Establish a great library. Cultivate the love of letters. As I say these words I see the image of a young poet, too early snatched away, who was once a professor of literature in this University, Edward R. Sill. I trust that his mantle has fallen upon another poet here. I hope that many men and women are to come up and make large the column, already on the march, of those who have produced a literature redolent with the experiences, the hopes, the beauties, and the aspirations of the Pacific Coast.

Encourage, particularly at this time, the development of the medical sciences. I doubt if anybody who has not had his attention called to the recent progress of medicine and surgery has any idea what an epoch is opening before us; what trained men and women are coming to the front; what new methods of observation and treatment have been discovered; what light has been thrown on the causes, the prevention, and the cure of disease. It will be a noble purpose to extend and strengthen in every possible way the medical faculty of this University.

Remember the importance of politics. I am not afraid to use the word "politics," and to urge every young man who goes out of college to "go into politics"; not in the sense of aspiring to political office, not in the sense of managing men in an unworthy way, but in the sense of devotion to the public good. One of the best signs of the times is the fact that most of the young men who go out from our colleges are interested in public affairs. They are on the side of good government; they believe in civil service reform; and they look with hope and not fear toward the future of our country.

Finally, ladies and gentlemen, face the Pacific Ocean and do not be afraid of it. I was startled a few moments ago when the chairman read my own predictions of a quarter of a century ago. I noticed that one word was left out—he did not quote anything about the Philippines.

(Regent Hallidie—"You mentioned 'the islands of the sea.'")

He reminds me that I mentioned "the islands of the sea," but I do not believe I was thinking of the Philippines. Now, for better or worse, for richer or poorer, we are there. Yonder is the gateway by which our countrymen are going to the Orient. The next five-and-twenty years will certainly show vast influences, for good or for evil, on all the eastern countries, proceeding from California. Unquestionably the national government of the future will send out as its representatives in Asia, men who have dwelt on these shores. Unquestionably the minor offices of government will largely be filled with young men going out from this region. Your ships are to transport not merchandise only, but ideas. Your influences of every sort are to be felt in these far distant countries; first in Hawaii, then in the Philippines, and afterwards, assuredly, in Japan and China.

There are two or three things which this University can do. It can advocate a pure civil service and the selection of competent men for posts of responsibility. An English traveller told me not long since, that England never awakened to a sense of the importance of good home government until her young men were sent to India, and there brought into contact with other races, and with men of other nations, and were thus forced to show the very best qualities which the Anglo-Saxon race possesses. I believe that the sending out of our young men to the Orient will be the means of promoting a better government at home than what we now possess. Civilisation as it goes forward will not only need official representatives,—teachers

will be called for. There is already the nucleus of a university in Manila; but it certainly would be propitious if the Americans, if the Californians could do as General Kitchener did at Khartoum—establish a college in Manila, an off-shoot of Berkeley and Stanford.

I must conclude. My message is summed up in these words: Uphold and cherish and hand on the idea of liberal culture as one of the most important heirlooms which our generation possesses. Never say a word to disparage it; and if sometimes those in authority seem to check the development that we hope for, remember that in every harvest, husks and chaff are mixed with the grains of wheat.

Let us study the progress of human civilization, remembering that by ideas the world is governed. They are stronger than kings in council, or representatives in Congress; more enduring than Bills of Right, or written constitutions, or governments, or treaties, or creeds: they bind together men of different speech, of different races, of different parties; they give unity to human purpose; they promote human progress: and universities are the exponents of these civilising ideas. We accept them as an inheritance from an antiquity we know not how remote; we pass them on to generations we know not how distant, to lands we know not how far.



RESEARCH

A Speech Delivered at the Convocation of the University of Chicago, June, 1903



XIV

RESEARCH—A SPEECH DELIVERED AT THE CONVOCATION OF THE UNIVERSITY OF CHICAGO, JUNE, 1903

IT is a great privilege, *Rector Magnificus, Senatus Academicus,* to address this Convocation. It would be both easy and pleasant to spend the hour in recounting the obligations of the entire land to the munificent Founder whose gifts are not limited in amount nor restricted to one locality; and to the President and the faculties, whose learning and enthusiasm have secured for this institution such high distinction, not only in the United States, but in the world of science and letters, as the most suggestive, the most comprehensive, the most successful, and the most hopeful of many new foundations among us for the advancement of higher education. This city has much to be proud of, much that excites the admiration of other places; but there is nothing worthier of its pride, its hopes, and its confidence than this young and vigorous University to which so many scholars have consecrated their lives, to which so many benefactors have consecrated their fortunes.

But I must not be restricted to this theme, however alluring. I ask you to consider the progress of science in the United States of America, as it appears to a watchman on the towers, at the beginning of the twentieth century.

Let me prepare you for an optimistic view, to which I am driven by certain disparaging comments that have lately been printed. Before I conclude, I shall indicate some of the purposes and hopes of the Carnegie Institution that bespeak from the scientific workers in this country confidence combined with patience and consideration.

To conciliate an audience which includes many eminent specialists, let me disclaim expertness in any branch. Not mine the satisfaction of adding to flora or fauna a specimen "new to science," nor of discovering an asteroid before unseen; not mine the greater distinction of perceiving and announcing relations and laws, hitherto unknown, which govern the affinities of matter and the units of force. To me electricity and magnetism are mysteries even greater than they are to the most able physicists. To weigh the stars and measure the velocity of light seems to me an achievement as difficult as to write an epic or conquer an empire. Before the queen of the sciences—abstract mathematics—I bow my head and kneel uncovered. Yet I am an observer of the progress of science, who has had opportunities, prolonged and, in some respects, unique, for watching, and now and then for helping, the workers, to whom appreciation and sympathy could at least be offered; often pecuniary support; once in a while, counsel; sometimes, defence; always, admiration.

Observation from this watchtower will be clearer after some of the underbrush which might interrupt our vision has been removed. I begin by reminding you that during the last century the range of science was vastly extended. Its domain is now imperial. When some of us were undergraduates science was restricted to the phenomena of the visible world, to the study of those objects which might be measured by instruments of precision. Chemistry, physics, and natural history (to which geology, on the one hand, and medicine, on the other, were related) were the chief departments. Mathematics, pure and applied, was an entity apart. Now all these subjects are subjected to manifold subdivisions, as branches of science; at the same time, a host of younger aspirants claim recognition as belonging to the parent stem. History, archæology, geography, meteorology, agriculture, philology, psychology, logic, sociology, and even

jurisprudence and theology, are employing the scientific method, with increasing success, and demand recognition in the surrogate's court, as the next of kin. Conservative observers of nature, and especially the workers in laboratories and museums, may look askance at these newcomers, as the aristocracy regard the *nouveaux riches,* and as bearers of armorial bearings, worn since the crusades, regard the heraldic escutcheons which are fabricated to-day. Yet may we not claim that this vast expansion of the scientific method is one of the most remarkable and one of the most propitious gains of the nineteenth century? To the doctrine of evolution, and its great expounders, the advance is largely due. Nevertheless, while the old line between the sciences and the humanities may be invisible as the equator, it has an existence as real. On the one side are cognitions which may be submitted to demonstrative proof; which do not depend upon opinion, preference, or authority; which are true everywhere and all the time; while on the other side are cognitions which depend upon our spiritual natures, our æsthetic preferences, our intellectual traditions, our religious faith. Earth and man, nature and the supernatural, letters and science, the humanities and the realities, are the current terms of contrast between the two groups, and there are no signs that these distinctions will ever vanish. Apparently mankind will continue to enjoy the great productions of literature, music, painting, sculpture, and architecture, without regard to the brains that produced these delight-giving works; and humanity will cultivate the sentiments of affection, loyalty, and worship, without regard to the pulsations of the heart and the reactions of our nervous systems.

Moreover, the opposition which science encountered from theology died, or at least became moribund, in the nineteenth century. In the twentieth, only memories will survive of the dogmatism which endeavoured to stifle in their helplessness, like the babes in the tower, those infant sciences, as-

tronomy, geology, biology, and evolution. The story of past conflicts and of steady triumphs, is it not related in the volumes of Andrew D. White? The attitude of to-day, is it not shown in the recent speech of Lord Kelvin, and in the Autobiography of Joseph Le Conte?

Again, the dread of science, as a dominant factor in higher education, which was prevalent in the early part of the nineteenth century, has reached the vanishing point. "Bread-and-butter studies" are no longer spoken of in derision, as they were in my undergraduate days.

All this is general, applicable to other lands as well as to our own. Now, when we restrict our vision to this country, specific considerations become so obvious that I need only mention them.

These among others are conditions favourable to the advancement of science among us:

The diffusion of popular education, securing an army of intelligent people, among whom the elect discoverers and investigators are constantly appearing.

The general acceptance of elective courses in schools of all grades, especially in colleges, so that individual wants and personal aptitudes may be provided for. This is a triumph of the last thirty years.

The readiness of the United States Government, and of many separate States, especially in the West, to contribute liberally to the support of applied science. An enumeration of the resources of the national capital, made here two years ago, shows what Congress is willing to do: for one department of investigation a million and a quarter dollars in one year! Another sign is found in the growth of agricultural colleges and experiment stations throughout the land, and the development of the Department of Agriculture. Another sign is the growth of State universities.

The admission of educated women—not in exceptional cases, but in considerable and increasing numbers—to the

opportunities of original investigation for which, in certain departments, they show marked adaptation and for which they can readily prepare themselves in the colleges for women.

The establishment of libraries, museums, laboratories, and observatories by the munificent and unparalleled generosity of American citizens.

The sharp distinction between collegiate and university ideals.

With these favourable conditions there are some that are unfavourable. The remuneration afforded to the leading exponents of science is for the most part quite inadequate. Larger salaries, with pensions for old age and disability, with provision for widows and children, are much to be desired. Suitable recognition for scientific attainments is still wanting.

The great demand upon the educated and intellectual classes of our country for service in financial and industrial incorporations, where compensation of a liberal amount is assured, absorbs much ability. Many young scholars, who might rise to distinction if their talents were devoted to literature and science, are diverted from these fascinating but unremunerative careers by the necessity that they foresee of securing a competence, perhaps, in some case, by a preference, inherited or caught by infection, for that luxury which modern society encourages to the neglect of old-fashioned economy, moderation, and repose.

As science can have no rapid development without prompt publication, it is well that many periodicals devoted to research are now maintained in this country; but it is a misfortune that many of them appear under such restrictions that they have very limited circulation, and that often the editorial supervision is so inadequate that the elimination of poor material and the condensation of that which is good are neglected. We are prone to "printing without publishing."

Consequently our journals are not as widely read abroad or at home as they should be. In the next stage of progress there will be an agreement among the leading editors and publishers to appear as co-operators, and not as rivals, in the use of the printing-press. We may be sure that the law of the survival of the fittest will soon prevail.

Under these conditions a new term has become current in our academic vocabulary, the term "research." It is a new term, not a new idea, for Herodotus and Aristotle, Roger Bacon and Francis Bacon, Isaac Newton and Linnæus, Franklin and Rumford, and hosts of American forerunners and contemporaries, eager in the pursuit of knowledge, have made contributions to the storehouses of mankind which still furnish seed-corn to the cultivators and experience to experimenters. "Research" is not a felicitous term. Neither, for that matter, is the term "university," which originally meant the entire body, or corporation, of civic, ecclesiastical, or educational authorities. Centuries ago the world gave its preference to "university" and turned a cold shoulder upon *studium generale.* Apparently, "research" has likewise come to stay.

The word was presented to the English-speaking world in 1875 in a volume entitled *The Endowment of Research,* by Dr. Appleton, an English scholar. We have the authority of his learned associate, the humanist Mark Pattison, for saying that it was then a new conception made popular under the term "research." "The term," he remarks, "is inappropriate enough, but, like all complex conceptions, no one word in the language is anything like adequate to cover this conception; yet some one word must be employed when we want to speak much of the thing." Whatever results may have followed in England, the arguments of Pattison and Appleton and their associates had a very strong influence upon the organisation of one American university in the year 1876, and since that time the conception of "research" has spread

throughout our land from peak to peak like the signal fires described by the Greek dramatists.

I wish it were possible even now to use the words "investigation" and "investigators," but certainly something more than an act of the legislature will be required before the child can throw off the name by which it has been christened. Even that suggested is not very good. The "advancement of knowledge" was Lord Bacon's phrase, adopted by the founder of the Smithsonian Institution for the "advancement and diffusion of knowledge." "Creative action," says President Eliot, was the phrase of Ralph Waldo Emerson. "Constructive scholarship" is proposed by Münsterberg. With the word "research" has come the supplementary "research assistants," and in every laboratory of the land funds are demanded for their compensation. Evidently the young aspirant, at the outset of his career, requires control, or at least the counsel of a more learned and experienced person, or his production will be a memoir of busy idleness. Counting the threads of a carpet, or the grains in a bushel of sand, may add iotas to knowledge, but it will be to the domain of useless knowledge. Doing what has already been well done is a waste of energy, though we call it research. Time given to isolated and unrelated inquiries is a bad investment. On the other hand, genius will propose its own path, will ask its own hard questions, and proceed by its own methods to answer them.

We often hear discussions as to the relation of instruction to research. Sterile intellects attribute their non-productiveness to overwork, when a more acute diagnosis detects a lack of will-power. Will-weakness is as common as neurasthenia. None of our college faculties are perfectly immune from this infection. It must be admitted that serious administrative duties are impediments to prolonged work in the laboratory or the library; but instruction is not administration. Sylvester, the great mathematician, said that his

mind was never so fertile as when excited by the queries and criticisms of his pupils; and scores of our eminent contemporaries would say so, too. On the other hand, certain minds have done their best work without pedagogical obligations. Darwin, Lyell, and Hooker form a conspicuous trio of the non-professorial class. Herbert Spencer drew no stipend. Willard Gibbs won distinction before he won a salary of a thousand dollars. The astronomer Hill needed no outside impulse; his was the rare power of self-fertilisation. Dana was famous as a naturalist long before he was a professor. No absolute rule can be laid down more explicit than this, let those who have the duties of a professorship discharge them well; and those who have leisure be sure that it is not wasted.

Let us now consider how well prepared this country is for scientific research or productive scholarship. Certain favourable conditions are obvious. Some may be indicated,—widespread, almost universal, education furnishing a large body of well-instructed persons, from whom recruits may be drafted; freedom from the restrictions of an established church and from governmental impediment; general recognition of the importance of scientific inquiry; in many directions—liberal outlays by the nation and by States; munificent endowments from individuals, becoming, as the years roll on, more liberal in amount and more liberal in scope; noteworthy indications of versatility, ingenuity, adaptability and patience on the part of American youth; unselfish readiness to enter upon unremunerative careers for the pleasure of living in devotion to science; and a newspaper press eager to make public every new birth.

Nor is this all. Our equipments are good; collections of books and periodicals are very large and well chosen; museums of natural history are rapidly increasing; our astronomical instruments are unsurpassed; our physical and chemical laboratories have all the requirements of modern science,

If I may be allowed to use a word from the market-place, we have an extensive plant, facilities adequate to a very large business. Perhaps the plant is greater than is requisite to-day. No matter. Darwin wrote to Thistleton-Dyer, in 1878, these words:

> I have a very strong opinion that it would be the greatest possible pity if the physiological laboratory, now that it has been built, were not supplied with as many good instruments as your funds can possibly afford. It is quite possible that some of them may become antiquated before they are much or even at all used. But this does not seem to me any argument at all against getting them, for the laboratory cannot be used until well provided; and the mere fact of the instruments being ready may suggest to someone to use them. You at Kew, as guardians and promoters of botanical science, will then have done all in your power, and if your laboratory is not used, the disgrace will lie at the feet of the public. But until bitter experience proves the contrary, I will never believe that we are so backward.

When Rowland was asked to select the apparatus for the new university to which he was called, he bought freely the costliest instruments of precision. The supply preceded the demand; the demand appeared at once. An amusing illustration of the conservative hold-back is given by President Loudon in a recent admirable appeal for the recognition of research in the universities of Canada: "An English professor, himself a classical scholar (on an occasion so recent as the establishment of the physical laboratory in the University of Toronto), inquired: 'Why go to the expense of purchasing this elaborate equipment, until the physicists have made an end of making discoveries?'" No American scholar could have asked that question.

The size of a college has nothing to do with the progress of investigation. I read, for example, that a recent traveller who had reached Lassa, in Thibet, found near the forbidden shrine three institutions where fifteen thousand monks are engaged in learned pursuits. In one of these, six thousand

boys, young men and grey-bearded patriarchs are studying theology; yet not one contribution to science has ever come from that focus of Buddhist lore, though Dalai Lama is the living Buddha. I remember that the Royal Institution in London, without any students, gave rooms to Young, Davy, Faraday, Tyndall, Rayleigh, and Dewar—a truly apostolic succession. Agassiz and Guyot won their distinction in the fresh-water college of Neufchâtel. Princeton was an undeveloped institution when Joseph Henry made his fundamental discoveries in electro-magnetism. Yale had a very meagre equipment in books and instruments when Olmsted, Herrick, and Newton made their discoveries in respect to meteoric showers and the origin of comets. Liebig's renown was established in the little laboratory which still stands as his proud monument, at Giessen, long before he was called to Munich. Scores of such instances might readily be cited. Indeed, the facts are so obvious that a false exaggeration declares that the progress of science varies inversely as the size of the laboratory: the larger the place and the more the students, the more arduous the administration and the more frequent the interruptions. It has been wittily said that Boston is not a place, but a state of mind. So I would say: Research depends upon a state of mind, and not on the laboratory or the instruments.

With all the advantages that have been enumerated, how are we succeeding? Listen to a brilliant exotic, Professor Münsterberg, who declares that the "idea of continental Europe, in regard to the productive scholars of the New World, can be as easily as briefly stated," and then he makes this formidable announcement, which he calls "the idea of continental Europe," in respect to American scholarship. It is summed up in three ominous words: "There is none."

An American, long resident in Europe, Carl Snyder, sings the same dirge. "America's position in the world of science is inferior" are his words. "Why has the United States so

slight a share in the marvellous scientific advance of the century?" is his significant inquiry. Several pages are devoted to the delineation of this failure.

I do not know by what processes of telepathy or wireless telegraphy this "idea of continental Europe," in respect to productive scholarship in America, can be reduced to three words: "There is none." I prefer to scan the list of Americans who have received the highest honours of the academies of sciences in Europe—honours which are bestowed only for important contributions to knowledge. Begin with the names of Franklin and Rumford, then read the roll continued in our day by the names of Joseph Henry, Louis Agassiz, Asa Gray, Joseph Leidy, Benjamin Peirce, James D. Dana, Hubert A. Newton, James Hall, O. C. Marsh, Henry A. Rowland, Joseph E. Keeler, Willard Gibbs, and by scores of living investigators now active in every part of the land.

Here let me pay a tribute of friendship and admiration to one of our countrymen who has just departed, having attained to the highest rank among the mathematical physicists of the world—Willard Gibbs, whose eminence, like that of Sir Isaac Newton, will be more and more conceded as time rolls on.

He was an authority upon themes of great importance and difficulty in a domain where the door is open only to those who can give the pass-word as past-masters in a science most profound, where his leadership was that of exploration and conquest, where his distinction is acknowledged by the most distinguished physicists in Europe and America. There is good authority for saying that "by a wonderful exercise of scientific imagination and logical power he predicted the greater part of the science of physical chemistry." His creation of the vector analysis is equally remarkable. Professor Ostwald, one among the foremost, says of the work of Professor Gibbs in thermo-dynamics: "Untouched

treasures, in the greatest variety and of the greatest importance, to the theoretical as well as to the experimental investigator, still lie within its pages."

This is not the place for the enumeration of other subjects which were enriched by his genius. At the moment, we can only place the name of Willard Gibbs among the foremost of American intellects at the opening of this century, and commend to younger men his life and example. In his crown are seven precious stones—Genius, Training, Resolution, Self-dependence, Perseverance, Modesty, and Success.

In academic circles Chauvinism is offensive, and I would not venture thus to speak of the achievements of our countrymen, were it not that derogatory remarks have been received with applause by a chorus of pessimists; were it not time that the voice of the optimists should be heard in the land. Under these circumstances you will perhaps listen without censure to these concluding remarks. To illustrate American activities in science, I would dwell upon the progress made in the study of our vast domain between two oceans, to the knowledge acquired of its coasts, harbours, rivers, lakes; of its valleys, plains, hills, and mountain ranges; of its mineral deposits, and of the slow processes by which the terrestrial features have been moulded and modified. I would recall what has been done beyond our own territory, in surveys of the Atlantic and Pacific seas, and in the Levant. I would enumerate the memoirs in which the flora and the fauna of this continent have been enumerated and described—the mollusks, the crustaceans, the fishes, the reptiles, the birds, and the mammalia living and palæozoic; the mosses, the ferns, the algæ, the flowers, the shrubs, and the forests. I would point to the study of the weather and the climate, and our contributions to the laws of meteorology. I would follow American explorers in their near approach to the north pole, and go with others to Alaska and eastern Siberia. I would summon a great company of American archæologists and

ethnologists engaged in the scrutiny of primitive man. I would remember that this earth is a star among the stars, and enumerate the contributions to astronomical science which have been made by observing the starry heavens and in the quiet studies of able mathematicians. The work of our chemists should not be overlooked, nor the fact that one of the most brilliant among them has declined a chair in a German university offered to him in recognition of his researches. In the field of physics some of our most gifted countrymen should be named and mention should be made of their investigations of the velocity of light, in spectrum analysis, in the mechanical equivalent of heat, in the determination of electrical units, and in other abstract, far-reaching studies of fundamental laws. I would show that the group of studies called biological has not been overlooked, and would name the memoirs and treatises in minute anatomy, neurology, embryology, morphology, and physiology which have come from the laboratories of biology, and the fruitful results of bacteriological and pathological studies which have resulted in the partial or complete control of certain infectious diseases. Nor would I forget the contributions to classical and Semitic archæology which Americans have made and are making, and to the distinction won by William Dwight Whitney and his followers in comparative philology, and to the impulse given to Biblical studies by Dr. Harper, the head of this university.

Two new forces have lately been introduced, which will prove to be supplemental to those already at work in our best universities and colleges. One of these, an institution devoted to pathological investigation, is due to the founder of this university, Mr. John D. Rockefeller. The other is an establishment for the aid of scientific investigation in any part of the country—the munificent gift of Mr. Andrew Carnegie. His many gifts for varied purposes had already secured the gratitude due to a prince of philanthropists, and

he now enrolls his name among the foremost promoters of knowledge. His new endowment had no precursor and no parallel. Rumford's gifts in the eighteenth century and Smithson's in the nineteenth were its near of kin. The large amount attracted universal attention, but the purposes received still greater applause. Mr. Carnegie had the sagacity to perceive that education and investigation are distinct functions of civilised life; and that they may be promoted by different corporations. He differentiated the two chief objects of a university—instruction and research. He did not intimate that these two functions must always be separated. Nobody thinks so. They may be united. He merely gave emphasis to research in these words:

> It is proposed to found, in the city of Washington, an institution which, with the cooperation of institutions now or hereafter established there or elsewhere, shall in the broadest and most liberal manner encourage investigation, research, and discovery; show the application of knowledge to the improvement of mankind; provide such buildings, laboratories, books, and apparatus, as may be needed; and afford instruction of an advanced character to students properly qualified to profit thereby.

When asked if he wished his gift to be restricted to our countrymen, "No," was his prompt and wise response; "Science is not limited by geographical boundaries."

Let me conclude by repeating statements already made. Science, in the United States, at the beginning of the twentieth century has such a vantage-ground as it never occupied before. Laboratories of investigation have been opened; instruments of precision have been multiplied and improved; universities no longer give undue reverence to the written word; schools of science and for technical training have been organised; general education has improved; museums are well endowed and arranged; journals have been established for great departments of knowledge and for minute specialties. Men of letters no longer regard the

men of science as but half-educated; and the organised forces of religion no longer array themselves against the progress of inquiry. The spirit of science is recognised by individuals and governments. A few objections are heard, *Vox et præterea nihil.* Science is accepted as synonymous with exact knowledge. Truth takes the place of tradition. The study of nature has usurped the throne of human authority. Mankind has attained to a clearer knowledge of the great Omnipresence; so that many men of many minds find in an ancient Credo the best expression of their knowledge and their faith: "I believe in God the Father Almighty, maker of Heaven and Earth, and of all things visible and invisible." In the confidence, not always orally expressed, that science is the discoverer and interpreter of this divine order, men devote themselves, with the ardour of enthusiasm which has never been surpassed, to searching and researching, hoping and believing, almost knowing, that every step of progress contributes to the welfare of humanity, to the physical, intellectual, moral, and social improvement of the race. The twentieth century begins with these auspicious expectations. May it produce, in our country, many great benefactors, many wise and buoyant leaders, working hand in hand, many a brilliant discoverer, many a true philosopher.





THE DAWN OF A UNIVERSITY

WESTERN RESERVE UNIVERSITY

In 1882 the Western Reserve College, which had long been maintained at Hudson, in Ohio, was removed to Cleveland, and took its position there as the Western Reserve University. Adelbert College was then founded by Mr. Amasa Stone for the purpose of continuing under more favourable circumstances the college work that had been initiated many years before at Hudson. He chose the name "Adelbert College" to commemorate his son, Adelbert Stone, a student in the Sheffield Scientific School in New Haven of the Class of 1866.

XV.

THE DAWN OF A UNIVERSITY

It is just twenty years since a lad in health and good spirits, full of promise and hope, favoured by talents, the surroundings of a good home, and the prospect of future independence, left this city to pursue his studies in a department of Yale College. Three years later his lifeless body, rescued from a watery grave, was brought home to be buried. His friends mourned for him in the familiar lines of Milton on the drowning of Lycidas.

To-day his father builds this monument, Adelbert College, where other Cleveland youth will remember and emulate the character of that bright scholar, strong, versatile, buoyant, brave, studious, patriotic Christian.

When I was invited to deliver this address I asked for reminiscences from one who was a student with Adelbert at the Sheffield Scientific School. He sent me a glowing account of his early friend. Speaking of the resolutions of the Berzelius Society, to which Adelbert Stone belonged, he goes on to say: "I notice among these resolutions one that 'his memory shall ever remain green and fragrant in our hearts.' The memory of my friend is green and fragrant in my heart to-day. I can scarcely realise that more than seventeen years have passed since, side by side, we entered that fatal river. As I read the words written with youthful warmth of feeling, and under the immediate shadow of that great sorrow, I have no inclination to withdraw a single word or letter from the warmest testimonials of love and esteem then rendered. On the contrary, I can at this distance

of time, and with larger experience of life, the more fully appreciate the rare and beautiful symmetry of young Stone's character; and yet the mellowing effect of time is not needed to obliterate from the recollection of him any unloveliness of character or unkindness of act."

With such memories as these, with such an enduring monument as crowns yon noble site, and with such bright prospects as attend the opening of Adelbert College, may we not change our lamentation for less mournful notes, and from the poem whence his dirge was chosen, sing:

". . . weep no more,
For Lycidas, your sorrow, is not dead,
Sunk though he be beneath the watery floor;
So sinks the day-star in the ocean bed,
And yet anon repairs his drooping head,
And tricks his beams, and with new spangled ore
Flames in the forehead of the morning sky;
So Lycidas sank low, but mounted high."

To the fact that I was then an officer of Yale College, and a friend of Adelbert's, my presence here is doubtless due. But the way I can best honour him, and second the generous purpose of his father, is to lead this community to a consideration of the rare opportunity before them. It has been my good fortune to be a participant in developing a new department in an old college, the Sheffield Scientific School at Yale; in planting germs from old oaks in the new soil of California; and in shaping a new university on the border land of North and South. As I recall the exuberance of hope and purpose which inspires the teachers in these seats of learning, I am reminded of lines in Horne's poem of "Orion,"

"'Tis always Morning somewhere in the world,
And Eos ever rises, circling
The varied regions of mankind."

It is morning now on the meridian of Cleveland, and

we are looking at the Dawn of a University. This suggests my theme.

The responsibilities of those who undertake to organise the higher education in any community are very serious. They are acting not only for the present, but for subsequent generations. Their work is not restricted to the institutions they found; it pervades society, it holds up certain standards of culture, it moulds the character of those who are to be of influence in the affairs of church and state, it quickens or retards the progress of useful knowledge, it diffuses a love of literature and science, it produces abstract thoughts which by and by bear fruit in the affairs of practical life. In short, the highest school in any region is like the light-house of the harbour, giving warning and encouragement to the mariner, and serving equally the interests of those who are guided by its beams and those who are waiting on shore for the cargoes from distant climes. Fortunately these responsibilities are never committed to an individual, however high may be his station, or however great his knowledge, his wealth, or his character. They are distributed among the persons who provide the requisite funds, men like Case and Stone, who have been so generous in this city; the trustees, who guide the general policy of the institution, and have the final voice in the selection of officers; and the faculty on whom devolve the government and instruction of the youth. Even these three united powers, the founders, the curators, and the teachers, have not supreme authority. They are themselves controlled by public opinion, which may be enlightened and sympathetic, or cold and prejudiced; they are influenced by the usages now prevalent in other institutions, which may not be approved, but cannot be disregarded; and they are fettered by traditions, ideas worked out long ago, and under very different circumstances from those in which we dwell, bad ideas

mixed up with good in an intricate tangle of tares and wheat, but all possessed of a vitality surpassing that of written enactments, and underlying all conclusions in respect to instruction.

We may consider it unfortunate that the ultimate conclusions of men who have grown old in the service of our colleges have not been fully recorded, and that younger and less distinguished men have no convenient professional repository for the registration of their views on important pedagogical and educational doctrines. We have a great many school journals, voluminous reports, and innumerable conventions, but we have no digest. We cannot, for example, turn to any cyclopædia, or treatise, or scientific serial, or to the proceedings of any society, or to any set of annual registers, or even to any bibliography, and feel confident that we have been directed to the latest and wisest utterances of those who are entitled to speak by authority. We must search through piles of dusty pamphlets, we must enter into a wide correspondence, or we must travel extensively from college to college, if we would approximate to a thorough understanding of the opinions respecting the principles and methods of higher education, received in this country; and particularly if we would try to discriminate between that which is, because it has been, and that which is, because it ought to be. The progress of education is thus seriously retarded; we go over and over the same inquiries which our friends have been over before; we listen to speeches which add nothing new to the common stock; and worse still, we keep making experiments which have been made before, without being able to inform ourselves as to what has been already proved. It is not thus that science makes its giant strides. Every point gained by the student of nature is placed on record, where it may be studied, and verified, or controverted; every new discovery is registered, every significant fact is written down, every law is stated.

The chemist has in a convenient nook of his laboratory a few sets, that are lengthening every month, of journals in different modern languages, and to them he turns with the utmost confidence of discovering all that the science of chemistry has accomplished in any line of investigation. The mathematician has his journals; so have the physicist and the biologist. But we teachers and college managers, when we are placed in new and critical circumstances, and have some vital problem to solve, when some great and unusual gift is offered to us, some radical change of base is proposed, some enlarged opportunity unexpectedly stands opened, are often at a loss to know what the wisest men of our profession would advise, and where to look for indications of their experience on points which are kindred to those we are interested in. He will be a great benefactor of American colleges who gives us a series of reports of cases argued and decided in the high tribunals of education. We should there find the experience of Harvard and Yale, of Princeton and Cornell, of Ann Arbor and Berkeley, of Charlottesville and Johns Hopkins. Without such a repository or index, who can discover what advantages or disadvantages came from the removal of the university from the heart of a town to a suburban site, as in California? who can find out, at a distance, why the Sheffield Scientific School has maintained a vigorous independent life, and the Lawrence Scientific School has been so greatly over-shadowed by or absorbed in the academic foundation to which it is allied? who can know why William and Mary College lost its hold upon Virginia, and yielded to a State university the position to which its early origin entitled it? who can discriminate among the innovations which were introduced at Cornell University, and tell how many of its bright and progressive ideas have been followed by other institutions? how can the record of the University of Michigan be compared with that of other State universities, for the benefit of Texas, Nebraska, and other

States which are endeavouring to enter upon like undertakings? who can explain why certain promising foundations, like the universities of Albany and Troy, were so soon abandoned, while others, far less hopeful, continued to live? These are but examples of inquiries into the experience of our own country which the managers of every kindred foundation should make. If I am not mistaken, the result of such an investigation would establish several principles so clearly that they might almost be called the laws of higher education. Nobody enacted them; nobody can repeal them. They are the common law of our colleges. Some day a diligent student will come forward and reduce them to formal statements, and be to subsequent writers the Newton or the Grotius of educational doctrine.

Two or three such principles among the many to be deduced may be mentioned here as fundamental to all progress. In the first place the chief value of a college is in the intellectual training which it gives to those who follow its courses. In another connection I may discuss the various claims of different subjects, but here, in the very front of our reflections, I wish to repeat the old idea that the youth who are to pursue an intellectual life must receive prolonged mental discipline from those who are competent to give it. They must be taught to face difficulties and overcome them. On this point I believe that the college teachers in civilised countries are agreed; their differences have reference to methods only, and particularly to the question whether mental power may not be developed just as well by one subject or course of study as by another.

Closely related to this doctrine is a second—that moral and religious training should be coincident with intellectual discipline. It does not follow that colleges should be ecclesiastical foundations, or that attendance upon involuntary acts of worship is essential. But it does mean that while youth are forming their habits of body and mind, they are

also forming their habits of moral and spiritual life, and should be taught, not necessarily in the college, but simultaneously with their collegiate lessons, to build on firm foundations their ethical conduct and their religious faith.

A third accepted doctrine is this: Intellectual progress, like physical growth, depends on a judicious diet, which must be varied not only to please the palate, but to promote the health. Four groups of subjects are now-a-days freely offered to the students' choice, mathematics, the physical and natural sciences, language, and the historical and moral sciences. Not one of these can well be omitted. The reader of a recent discussion in England on the comparative claims or merits of literature and science might suppose that there was a perpetual conflict between two rivals, and that peace would not be established until one or the other of the high contending forces had surrendered. I am reminded of the old dilemma as to what will happen when an irresistible force meets an immovable body. The claims of science are certainly irresistible; the claims of literature unyielding. What will happen if they conflict? We had better avoid the issue by employing both these forces in alliance, for the promotion of intellectual and moral culture.

It is fortunately not necessary in this community to defend the fundamental ideas of liberal education, for by observation and experience you know the worth of colleges and are endeavouring, individually and collectively, to promote them in the most efficient way. But as it is always well to have a reason for the faith which is in us, I ask you to dwell for a few minutes on the motives which lead to such movements and such endowments as we here and now observe.

In the first place, we should consider the benefit bestowed upon the youth who are thus trained. Sceptics in regard to higher education may point to Shakespeare, with his little Latin and less Greek; to Franklin, the philosopher and statesman, with his homely English and poor French; to

Grote, the historian of Greece, who had no academic life; to Whittier, Howells, and Cable, our own gifted contemporaries, and to many more writers who never went to college; and I confess that such examples seem at first to show that colleges are not essential to literary culture. But we must remember that our institutions are not devised for an oligarchy of intellect, but for a democracy; not for a few royal dignitaries, but for a throng of faithful workers. In a recent biography of Spinoza you may meet this pithy saying: "The secret workings of nature, which bring it to pass that an Æschylus, a Leonardo, a Faraday, a Kant, or a Spinoza is born upon earth are as obscure now as they were a thousand years ago;" and if this be admitted, surely colleges are not to be built up and maintained for such extraordinary phenomena. We call these men gifted; we say they have genius; we except them from rules. They will win renown under any circumstances, hindered, but not repressed, by acting parts in a theatre, like Shakespeare; or setting type in a printing house, like Franklin; or managing a bank, like Grote; or learning the trade of a book-binder, like Faraday. It is neither for the genius nor for the dunce, but for the great middle class possessing ordinary talents that we build colleges; and it can be proved beyond the shadow of a doubt that for them the opportunities afforded by libraries, teachers, companionship, and the systematic recurrence of intellectual tasks are most efficient means of intellectual culture. Mental discipline may indeed be acquired in other ways; the love of letters is not implanted by a college; the study of nature may be pursued alone in the open air; but given to each one in a group of a hundred youths, a certain amount of talent, more than mediocrity and less than genius,—that is to say, the average ability of a boy in our high schools and academies, and it will happen in nine cases out of ten, that those who go to college surpass the others during the course of life, in influence, in learning, in the power to do

good, and in the enjoyment of books, nature, and art. Mental powers may be developed in other places—the mechanics' institute, the mercantile library, the winter lyceum, the private study, the gatherings of good men, in the haunts of business, and in the walks of civil life, but not so easily, nor so systematically, nor so thoroughly, nor so auspiciously, nor so pleasantly. With all their defects, colleges are the best agencies which the world has ever devised for the training of the intellectual forces of youth.

But this is not all that colleges effect. Let us in the second place remember that they hold up before successive generations all that has been inherited from the past. So long as our religious faith is based upon the sacred Scriptures, so long must we train up men who can expound to us the Greek and Hebrew writings. The history of the Christian church would be a sealed book were there not scholars to interpret the Greek and Latin fathers. The charm of Homer, the dramas of Sophocles, the eloquence of Demosthenes would be dead indeed if our scholars neglected Greek. The rediscovery of the Pandects of Justinian exerted upon modern society an influence which cannot be estimated. We should be hardly conscious of our kinship with other nations were the study of comparative philology neglected. Our own government and laws cannot be understood unless traced to their sources in early English and Teutonic ways. Our most familiar ideas of social life, the village community, the constable, the selectman, the parish, even the pound, have all been shown to be historic growths, or survivals from ancient developments, and, to appreciate their hold upon us, we must know their history. Colleges cherish such studies. They encourage their teachers to understand Man, his origin, his nature, his deeds, his possibilities, his destiny. One great group of studies used to be always called "the Humanities"—a name that should not be allowed to perish. Colleges remind us of

the conditions of permanent success. They keep us familiar with the writers, the orators, the philosophers, the discoverers of every age and in every land, and they hold up to our thought this divine all-illuminating truth: "Beyond the things which are seen and temporal are the things which are unseen and eternal."

A good college gives training in the arts of expression, as well as in those of observation; it not only favours the acquisition of knowledge by its students, but it shows them how to bring forth their knowledge for the benefit of others. This function of a college has not always been sufficiently developed. The learning of appointed lessons, the memorising of rules and dates, the solution of problems, and the observation or performance of experiments, all this is undoubtedly good discipline, but it is not enough. The scholar should be able to express himself clearly and concisely, and there are very few, indeed, who can do this without long and careful practice. I have talked with some of the leading publishers of American books, regarding the manuscript submitted to them, and I have spoken with editors of the very best magazines, and from both these sources, which are, doubtless, perfectly well informed, I received the same impression, that this country is now prolific in writers, but that the number of trained literary men who can write well, and make of literature a profession, is very small. There are many who are eager to print their effusions, but there are few who are willing to elaborate their work, re-writing, re-arranging, pruning, condensing, until the best form is attained. It is a mistake to suppose that writers who win the highest renown are commonly hasty, that they dash off what they say by a stroke of genuis. The biography of Dickens shows what pains he took even to secure the right proper names; for example, note his choice of the title "Household Words." Pages of his proof sheets, which I have seen, show how carefully

he revised every paragraph. The very last proofs of "Peveril of the Peak" (owned by President White) show that a romance of Walter Scott received the master's final touches just before the printing began. Bret Harte's famous poem on the "Heathen Chinee" was corrected and recorrected, and on the ultimate revision received, I believe, that satirical touch, "We are ruined by Chinese cheap labour." Emerson is considered by many as a sort of oracle, simply opening his mouth to let fall aphorisms of profound wisdom, but recent and authentic narratives of his life show that he forged his sentences like the gold-beater who is preparing a setting for pearls. One of his biographers (Mr. Cook) has taken the pains to trace the genesis of some of his favourite writings and well-known phrases. "The published essays," he says, "are often the results of many lectures—the most pregnant sentences and paragraphs alone being retained. His apples are sorted over and over again until only the very rarest, the most perfect, are left. It does not matter that those thrown away are very good—they are unmercifully cast aside. His essays are consequently very slowly elaborated, wrought out through days, and months, and even years of patient thought."

You may think it very trifling for me to speak of penmanship, but I cannot refrain from telling a story of one of the most illustrious mathematicians of the nineteenth century, whose great treatise lay unnoticed for nearly three years in the archives of the French Academy, because, as Legendre himself acknowledged, it was almost illegible, being written with very faint ink, and the characters being badly formed. Resurgent from the temporary grave to which its bad penmanship consigned it, this treatise of Abel's became the point of departure for profound researches, still in progress fifty years later, by Cayley in Cambridge and Sylvester in Baltimore. All this seems to me to indicate that training, imposed by one's self or by one's teacher, is

essential to literary success. Colleges provide such training. Colleges, moreover, invite us to the study of nature, the earth and the stars, the laws of number and of force, the forms and functions of animal and vegetable life, and the elements of matter. What Ruskin eloquently advises, the college teaches by appropriate methods. "Go to Nature," he says, "in all singleness of heart and walk with her laboriously and trustingly, having no other thoughts but how best to penetrate her meaning; and remember her instruction—rejecting nothing, selecting nothing, and scorning nothing; believing all things to be right and good, and rejoicing alway in the truth."

In coming here, I happened to bring the writings of two very different men; one a typical American, James A. Garfield, the other a master of English culture, Matthew Arnold; President Garfield, college president as he was, before he entered the service of the State, complains of the failure of our schools and colleges to fit men for life; and likewise Matthew Arnold, the poet, the man of letters, the defender of Greek culture, declaims with equal vehemence, against the want of modern science in our modern education, and berates the rule of thumb which costs us so dearly. If two such differing doctors agree, the evil must be real. To remedy this evil, teachers and trustees must recognise the changing conditions of modern life, its perils and its privileges, and adapt their work to new conditions. Let me call attention to one of the new conditions which require consideration.

Among the chief pursuits of the Mississippi valley is the business of building towns. This the census shows. The centre of population, which was once at Baltimore, has been steadily moving inland on the line of the thirty-ninth parallel. At the latest observation, it rested a little beyond the southwestern corner of Ohio. In the great Mississippi valley the preponderance of numbers is now manifest; the prepond-

erance likewise of political power; may I not say the preponderance also of influential statesmen? May I venture to add of literary ability, when I remember that Howells was born on the borders of Lake Erie and Cable in New Orleans? Shall we not soon be obliged to say that great towns preponderate here?

More than one-fourth of the inhabitants of the United States are characterised by the statisticians as urban,—that is, as dwelling in towns and cities. West of the Alleghenies, there are already one hundred and three towns having each above 10,000 people. This indicates that the population of the Mississippi valley, remarkable as that region is for its marvellous agricultural advantages, tends toward the central life of a city or town. Every one of these civic communities should be organised and governed in the light of modern science, and should employ an urban engineer as its paid adviser in all that pertains to the application of modern science to convenience, comfort and health. I will not here expand this suggestion, but I am sure that there is a new profession for which young men may be trained, and in which they may render just as valuable service as is given by the legal adviser or the superintendent of schools. Our civil service will not be completely reformed until municipal arrangements, which affect the property, the comfort, the health, and even the life of the citizens, are directed by the counsel and authority of a man of liberal education, trained in all that pertains to the requirements of a well ordered town.

It is of great importance, I claim, in advocating the study of nature, to keep before the public sound views of the interdependence of theoretical and applied science. They go hand in hand promoting human progress. Applied science needs no fostering care, for capital is always ready to seize upon good inventions and turn them to account; witness the steam engine and the telegraph. On the contrary, pure

science does need encouragement and support; and that support must be given by universities and colleges. It is not their exclusive province, I admit, but they are wanted to furnish such aid, generously, persistently, and without reference to immediate results.

Recent circumstances have called universal attention to electricity, and as the progress of this science affords a good example of the doctrine I am endeavouring to enforce, I propose to dwell upon it.

There is now in session at Paris an international commission of scientific experts. It is not a congress, nor a convention, but a select assembly of eminent physicists, delegated by their respective governments to discuss theories and determine methods, which may be applied in every part of the civilised world to the solution of electrical problems. They constitute a sort of international academy of physical science, an *École des Hautes Études* in physics, such as the world had never seen before. The appointment of this commission is due to the action of a much larger body which assembled last year, in connection with an exhibition of electrical apparatus and appliances held in the Trocadero. This assembly drew up, after long consideration, a series of propositions to be discussed by the more select body, which has now been convened. The inquiries proposed are based on all that has hitherto been discovered and invented, and indicate the problems which need international conference for their complete solution.

Cleveland need not be reminded of the uses of electricity. You would agree with Professor Mascart, of Paris, who said that the world not only demands the transmission of thought, speech, and light by electricity, but also the performance of mechanical work. You would not think M. Dumas extravagant in closing the congress with the remark, that " the nineteenth century will be known as the century of electricity,"—as the fifteenth has been called the century

of geographical discoveries. But it may be worth while to remind you that these achievements have been accomplished almost within the range of one long life. Prior to Franklin, who flew his famous kite in 1752, the relation of electricity and lightning was unknown; even his experiments were at first received with incredulity and ridicule. Galvani was experimenting on his frogs, as he sailed from Sinigaglia to Rimini in 1795. Coulomb, not far from the same time, invented the torsion balance. Volta was called to Paris in 1802 to receive for his discovery of the voltaic pile that great prize which in 1881 was bestowed upon Alexander Graham Bell.

Before men could cable a dispatch, or speak through a telephone, or read by an electric light, or travel by an electric motor, the two forces of abstract science and industrial skill had been working together through seven or eight decades of this century, from Volta to Edison. The torch of science had been handed from one genius to another. Now it was in Italy, now in France, now in Germany, now in Great Britain, now in America. At one time the light was held in the hands of pure science; at another, of ingenious art. Discoveries thus effected wrought greater changes in commerce than the discovery of the passage around the Cape; greater modifications in domestic life than any invention since the days of Gutenberg and Faust.

But I wish to bring forward the fact that in all this progress the educational foundations contributed that which was fundamental and indispensable,—though they have rarely received credit for their part. Volta was a professor in Pavia when he discovered the voltaic pile, and Ohm was a professor in Munich when he won "the blue ribbon of science," the Copley medal of London. It was in the University of Göttingen that Gauss and Weber pursued their mathematical researches; it was the Royal Institution of London which discovered and fostered the genius of

Faraday; it was in the laboratories of Scotland and Germany that Kelvin and Helmholtz won renown; it was from the lyceum at Lyons that Ampère was called to the Polytechnic School of Paris; it was in the Albany Academy that Joseph Henry began his discoveries. Without their hidden labours we should not have seen the conspicuous triumphs of modern electrical art. Without the encouragement of just such men as these, in future, the electrical arts will stand where they are,—and the results, which seem to be so near at hand, will recede like the waters which surrounded Tantalus.

For the last fifty years pure mathematics has been in partnership with experimental observation. Indeed, it was not until men, trained by the exact methods of mathematical science, discussed the fundamental theories that the inventor's work began. Neither method could have led to such practical results without the other's aid. But popular applause and pecuniary gains have rarely been given to the elaborators of a theory. It is therefore the duty of a university to cherish and encourage such men,—all the more earnestly because the part of a theorist in the promotion of an art is likely to be abstract and hidden, little talked about and inadequately rewarded.

It is a slight but just recognition of such services that in technical terminology, employed in every land by the practical electricians, the names of these quiet workers in the laboratory and the den are to be constantly repeated,—and the Ohm, the Volt, the Ampère, the Coulomb, and the Farad will forever echo in every tongue the names of those physicists who have made possible by their researches the modern arts of electricity.

The munificence of Americans is one of the admirable forces now moulding human society. It surprises the people of other lands; it surprises ourselves. Every new gift begets another. When the genealogy of education comes to

be written, we shall read that old England begat New England, and Cambridge begat New Haven, old Connecticut begat new Connecticut, Yale begat the college at Hudson, and the college at Hudson begat the Western Reserve University at Cleveland, with its allied foundations.

I now turn to the local aspects of the problem. The transfer of a well-planted institution to another site more than twenty miles distant, the establishment of a great school of science in close proximity, the proposed removal of a professional school to the same neighbourhood, and the adoption of the name "University," the loftiest term in all the vocabulary of education, clearly indicate a tendency to do more than has yet been done for the higher education in this region. The movers in these enterprises must have more than human skill if they can carry all these projects forward without friction. I have not heard of any such interruptions in New Connecticut as occurred in Old Connecticut, when the infant collegiate school, which has become the university of Yale College, was removed to New Haven from the town of Saybrook. The story goes that the people along the shore line were so indignant at the change of base that they stopped the carts which were transporting the books, and in the melée the library was scattered. Order was restored by an appeal to the Governor. There is no such danger here.

New life begins with pain. New inventions and discoveries disturb existing usages, and for the day seem to bring harm rather than good. Progress is not favourable to repose, and repose is the scholar's paradise. No one will wonder if the changes now going forward, which look so hopeful from the outside, are attended with some regret within the circle. Of any such details I am ignorant; I speak only of the ordinary feelings of human nature. At the same

time, I am so sure that the sun is rising upon Cleveland that I welcome the clouds which herald the dawn. They mark the movement of the morning's chariot. But not here alone. The most casual observer of educational progress in this country must perceive that the Nation is entering upon what might be termed the university epoch. Our common school system is established, we have an abundance of colleges—now comes the day for a few great, comprehensive, well-ordered, and well-endowed universities. It is easy to see that not only Cambridge and New Haven, but Ithaca, and Ann Arbor, and Baltimore, are advancing upon the university plane. But what is a university? Let me answer in the words of one already quoted.

Matthew Arnold says: the university "ought to provide facilities, after the general education is finished, for the young man to go on in the line where his special aptitudes lead him, be it that of languages and literature, of mathematics, of the natural sciences, of the application of these sciences, or any other line, and follow the studies of this line systematically, under first-rate teaching."

Again, "The idea of a university is, as I have already said, that of an institution not only offering to young men facilities for graduating in that line of study to which their aptitudes direct them, but offering to them also facilities for following that line of study systematically under first-rate instruction. This second function is of incalculable importance, of far greater importance even than the first. It is impossible to overvalue the importance to a young man of being brought in contact with a first-rate teacher of his matter of study, and of getting from him a clear notion of what the systematic study of it means."

To promote this idea two things are necessary, concentration and co-operation. Funds, plans, and teachers must be united so that without rivalry or needless repetition all the forces of advanced education in a given community may

be combined to advance the projects in view. It is not necessary for any member of the group to lose its individuality. The college and the school of science need not give up their dignity and independence because they are affiliated in a university. There must be a plan akin to that worked out in political life, a balance of powers, so that while local rights are preserved, the general interests are promoted. The problem is not easy, but its solution suggests far fewer difficulties than those which beset our national government. May not the parallel be carried further? As this nation began with local institutions, then proceeded to confederated action, and finally reached the idea of a federal republic, in which the rights of States were protected and the wider advantages of a union were secured; so may it be in our educational progress. There will be many colleges grouped under the ægis of a true university.

But a university is a good deal more than a federation of colleges. It is the exponent of this idea, that beyond the work of any college is the work of all the colleges of the group. Instruction far beyond the curriculum of a college may be given by the united forces of the university; libraries and collections, far more extensive than a college needs, are needed for the university; examinations and degrees, more dignified and stimulating than a college can offer, may be sought in the broader arena of university competition. I only hint at a few distinctions which cannot fully be set forth in a popular discourse. Fortunate will it be for Cleveland, if the idea is unfolded in many speeches and reports, in many conferences and debates, in sunshine and in showers, till at last the bud ripens and the fruit appears.

In thinking of the future, which may be at hand, nearer perhaps than most of us are aware, when Cleveland will be the seat of a university, in fact as well as in name, when liberal provision will be made for the prosecution of all branches of knowledge, I have been led to consider the

foundations of other high schools, not only at home, but abroad; to recall the munificence which at one time made Florence the seat of culture; at another, made Edinburgh resemble in its opportunities, as well as in its aspects, the ancient seat of Grecian literature; which again made Leyden bloom after the desolations of a long siege; Berlin to rise from its depression after the French invasion; Strassburg to come forward with new life after its bombardment; and, permit me to add, made Baltimore, at the close of our war and of our reconstruction period, the centre of influences in science and art, so varied and so good as to be an example to other cities. Each new gift, as it comes to maturity, becomes the parent of some noble offspring.

But I bring before you another example, the University of Göttingen, because the lessons of its history are peculiarly instructive to Americans, and especially interesting if we trace its influence upon the civilisation of our country.

It is worth while for the citizens of Cleveland, engaged in founding a university, to ask what has given Göttingen its power.

Is it age? No; it is younger than Yale, and Harvard, and William and Mary. It is an infant in years when compared with Bologna and Prague. The date of its foundation is 1737.

Has it the attractions of a fine city—a court and its surroundings? No; it was a "dull little place," said Haller, when he went to it. Even now it has but 20,000 inhabitants. It can not be compared with Munich, Berlin, or Vienna. Heine, in his "Pictures of Travel," begins with a fearful description of the city. "It pleases most," he says, "when looked at backwards."

Has it a choice natural situation? No; it is on a broad plain, remote from the sea, without near high hills; it does not compare in position with Heidelberg or Geneva, with New Haven or West Point.

Has it splendid architecture? No; in early times, only the plainest buildings. The houses of Heeren and Heyne were united under one roof for the needed class-rooms. Even now there are only the simple academic requisites. An American studying in Göttingen in 1825 has recorded the fact that he could discover nothing to remind him of a university—except the students.

Has it large landed estates or other hereditary endowments? No; it has depended on the appropriations of the state and the fees of the students.

Was it supported by the Presbyterians, or the Episcopalians, or the Methodists, or the Baptists, and did it care to choose its professors from the dominant denomination? No; its religious teachings were on the broad basis of evangelical theology.

Did its crew ever beat the students of Bonn in a boat-race, or challenge the university of Rostock to a game of ball? Not that I ever heard of.

Did it have a campus for athletic sports? No; but there were attractive excursions around the village and a fine promenade upon the old municipal wall, where professors and students took their daily "constitutionals."

What, then, gave to Göttingen its power? I answer, two things—wise methods and great men.

Münchhausen, the elector's minister, was the organiser of the work, and his plans to place the infant institution upon a foundation superior to any in Germany, are at this day models of instruction to Cleveland and to Baltimore. His wise methods secured great teachers; great teachers drew able scholars; those able scholars carried to distant lands the lessons they had learned. Think what Americans were drawn there—Everett, Bancroft, Motley, Gould, Child, Lane, Goodwin, Gildersleeve, Remsen, and many more. Think what a library has been formed there —500,000 volumes and 5,000 manuscripts. Think what

illustrious teachers have there taught—Haller and Blumenbach, princes of anatomy; Michaelis and Ewald, chiefs of Biblical and Oriental learning; Heyne and Otfried Müller and Carl F. Hermann in classical lore; the Grimms in Teutonic philology; Benfey in Sanskrit; Heeren in history; Weber and Gauss, *duces et principes* in mathematics and physics; Wöhler, whose death is just announced, in chemistry. Think how these men have affected our own country by their writings. The religious mind, next to the study of the gospels, turns to the history of the Jewish church. Whose history is popular? Stanley's; and from whom did his inspiration come? From Ewald of Göttingen. You may find his reference to his teacher in the second volume of his Jewish history. Ewald, when Stanley first met him, had in his hand a small Greek testament. "In this little book," he said, "is contained all the wisdom of the world." "To listen to Ewald," he says, "after ordinary teachers was like passing from the dust and turmoil of the street into the depth and grandeur of an ancient cathedral." Who among the fathers was the most patient and systematic and thorough student of the history of the United States? Bancroft. Who was his teacher? Heeren, of Göttingen. Whence came the modern treatise on waves which is at the basis of investigations in physics? From Weber, of Göttingen, when he was still a student, only twenty-one years old.

It is thus that a university is developed: First, there must be wise plans; second, sufficient funds; third, powerful teachers; then will come, fourth, many students; fifth, great collections; sixth, world-wide influence and renown.

Such an opportunity now presents itself to the citizens of this city and this region. I do not know what measure of wisdom, patience, and conciliation may be possessed by those who are leaders in these new movements. Personally they are almost all strangers to me—but their works are known

and read of all men. Here are sound traditions, intelligent people, well-organized schools, munificent gifts, high ideals; the auspicious beginnings of a college, a school of science, and a school of medicine are visible already. When will come the university with its great library, laboratories and museums, its college of law and of theology, its college for women, its observatory, and its institute for physical research, its schools of the fine arts and of music, its hospital, and its gymnasium? I cannot tell; but you, the wise, the strong, the rich and the liberal citizens of Cleveland can make the answer what you will.

Remembering that the buildings opened to-day are the buildings of Adelbert College, and that Adelbert College is but one member of the University that will bear the name of Western Reserve, strive to secure affiliations among kindred institutions which have been or may be founded in this region, for in union there is strength.

> "'Tis always Morning somewhere in the world,"

and I congratulate you that to-day we behold the Dawn of a University in Cleveland.

> "So having gathered violets, reap the corn,
> And having reaped and garnered bring the plough,
> And draw new furrows 'neath the healthy morn
> And plant the great hereafter in the now."





HAND-CRAFT AND REDE-CRAFT



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XVI

HAND-CRAFT AND REDE-CRAFT—A PLEA FOR THE FIRST NAMED

CALLS for more handicraft have been heard of late in many portions of this land,—sometimes a call for higher skill in the use of fingers and arms,—and sometimes a call for the wider spread of such skill among the people at large. Just now we wish to speak of some of the general aspects of a movement which is very complex as well as general, and at the same time is full of promise and hope.

We begin by using the word handicraft, for that is the form to which we are wonted in speech and in print; but we rather like the old form, "hand-craft," which was used by our sires so long ago as Anglo-Saxon days. Neither form is in vogue, as we know very well, for people choose nowadays such Latin words as technical ability, industrial pursuits, manual labour, dexterity, professional artisanship, manufacture, technological occupation, polytechnic education, and decorative art, not one of which is half so good as the plain, old, strong term, handicraft or hand-craft. We shall do what we can to bring back this old friend.

One reason why we like this word is that it includes so much, and yet is so clear that everybody knows what it means,—the power of the hand to hold, shape, match, carve, paint, bake, plough, or weave. Another reason why we like to say hand-craft is because of the easy contrast it suggests with another old word, which is likewise out of vogue, rede-craft, the power to read, to reason, and to think,—or as it is said in the book of common prayer, "to read, mark, learn, and inwardly digest." By rede-craft we find out what other men have written down; we get our book-learning; we are

made heirs to thoughts that breathe and words that burn; we enter into the acts, the arts, the loves, the lore, the lives of the witty, the cunning, and the worthy of all ages and all places.

Rede-craft is not the foe, but the friend of hand-craft. They are brothers, partners, consorts, who should work together as right hand and left hand, as science and art, as theory and practice. Rede-craft may call for books, and hand-craft for tools, but it is by the help of both books and tools that mankind moves on. Their union is as sacred as the marriage tie; no divorce can be allowed. The pleasure and the profit of modern life depend upon the endurance of their joint action.

Indeed, we should not err wide of the mark by saying that a book is a tool, for it is the instrument we make use of in certain cases when we wish to find out what other men have thought and done. There is a sense in which it is also true that a tool is a book, the record of past ages of talent engaged in toil. Take a plough, for example. Compare the form in use to-day on a first-rate farm with that which is pictured on ancient stones long hid in Egypt, ages old. See how the plough idea has grown; and bear in mind that its graceful curves, its fitness for a special soil or for a special crop, its labour-saving shape, came not by chance, but by thought. It embodies the experience of many generations of ploughmen.

Look upon a Collins axe, lay it by the side of such a tomahawk as was used by Uncas or Miantonomoh, or with a hatchet of the age of bronze, and think how many minds have worked upon the head and the helve; how much skill has been spent in getting the metal, in making it hard, in shaping the edge, in fixing the weight, in forming the handle. Take a cambric needle and compare it with the fish bone or the thorn with which savages sewed their hides. Or from simple turn to complex tools—the steam-engine, the sewing-machine, the dynamo, the telegraph, the ocean steamer; all

are full of ideas. All are the offspring of hand-craft and rede-craft, of skill and thought, of practice put on record, of science and art. The welfare of our land, of our race, rests on this union. We can almost take the measure of a man's brain if we can find out what he sees and what he does; we can judge of a country or of a city if we know what it makes.

We need not ask which is the better, hand-craft or rede-craft. Certainly, "the eye cannot say to the hand, I have no need of thee"; at times, indeed, when the eye is blind, the hand takes its place, and the fingers learn to read, running over the printed page to find out what is there as quickly as the eye. To what realms was Laura Bridgman, sightless and speechless, led by the culture of her touch! Helen Keller's story is more remarkable.

It is wrong that so many people, some whose minds are full of ideas and some whose purses are full of gold (not to speak of those who have neither), are prone to look down upon hand-craft. They think only of the tasks of a slave, a drudge, or a char-boy. They have never tasted the pleasure of making, the delight there is in guiding the fingers by the conscious and planning will. They like to hear, see, own, or eat what others have made, but they know nothing of the pleasure of production. Their minds may be bright, but their fingers are lazy. Many such persons work too long and too late with their eyes, poring over the story of what others have done, and keeping their brains alert with the tales of other people's skill; yet they never think of finding another sort of rest or relief in the practice of hand-craft. If you doubt this, put two notices in the paper, one asking for a workman and the other for a clerk, and you will see on the morrow which calling is popular. So it comes to pass that boys become men without being trained to any kind of skill; they wish, therefore, to be buyers and sellers, traders and dealers. The market, which is poorly supplied with

those who are trained in the higher walks of hand-craft, is doubtless overstocked with clerks, bookkeepers, salesmen, and small shopkeepers. Some young men who are poor in pocket and rich enough in talent go to college, allowing their mothers and their sisters to toil for their support, and many more accept the gifts of unknown helpers, and not because they prefer to do so, but because they have never learned how to produce with their own hands anything which the world is willing to pay for. Ask such a youth, "What can you do for your own support?" alas, how often will "Nothing" be the answer!

To some extent machinery works against hand-craft. In many factories the hand has but little to do, and that little is always the same, so that labour becomes tiresome, and the workman is dull. It is a marvel how machinery, which embodies the inventor's mind, takes the place of mind in the workman; machinery can cut statues, weave tapestry, grind out music, make long calculations in arithmetic, solve simple problems in logic,—alas, the machine has been brought into politics! Of course a land cannot thrive without machinery. How could the ore be brought to the surface and made current as coin without machinery; how could the prairies be tilled as they are without reapers and mowers; how could the corn, the beef, and the sugar be carried from our rich valleys and plains to the hungry of other lands; how could the products of their looms and foundries be brought back to us without the aid of those seven-league-booted giants, the locomotive and the marine engine? Nevertheless, he who lives by the machine alone leads but half a life, while he who uses his hand to contrive and adorn drives dulness from his path. It is hand-craft, the power to shape, to beautify, and to create, which gives pleasure and dignity to labour. A true artist and a true artisan are governed by one spirit; their brains are the masters of their hands.

In other climes and in other times, hand-craft had more

honour than it has with us. The touch of Phidias was his own, and so inimitable that not long ago an American, scanning with his practised eye the galleries of the Louvre, discovered a fragment of the work of Phidias long separated from the other fragments by that sculptor which Lord Elgin had sent to London. The artist's stroke could not be mistaken,—it was his own, as truly as our sign-manuals, our autographs. Ruskin, in a lecture upon the relation of art to morals, speaks of a note which Dürer made on some drawings sent him by Raphael. It was this: "These figures Raphael drew and sent to Albert Dürer in Nürnberg,—to show him his hand." Ruskin well compares this phrase with other stories of the hand-craft of artists,—Apelles and Protogenes showing their skill by drawing a line; Giotto in striking a circle. There is a custom, if not a law, in the royal households of Prussia that every boy shall learn a trade. The emperor is said to be a glazier, and the crown prince a printer; not long ago, as a birthday gift, his Majesty received an engraving by one prince and a book bound by another, both sons of the heir-apparent. In one of the most famous shrines of education in Paris, two paintings adorn the chapel walls, not of saints or martyrs, not of apostles or prophets,—perhaps I should say an apostle and a saint, *Labor* and *Humilitas;* Industry the apostle of happiness, and Modesty the divine grace. Is it not worthy of note that Isaiah, telling of golden days to come, when the voice of weeping shall be no more heard in the land, nor the voice of crying, when the child shall die an hundred years old, and men shall eat of the fruit of the vineyards they have planted, adds this promise as the greatest of all hopes, that the elect of the Lord shall long enjoy the work of their hands?

If now we really value hand-craft, we shall find many ways of giving it honour; we can buy that which shows it, or if we are too poor to buy, we can help on with our looks and words those who bring taste and skill into the works of their

hand. If your means are so small that you can only buy what you need for your daily wants, you cannot have much choice; but hardly any who reads these pages is so restricted as that: almost, if not quite, everyone buys something every year for his pleasure,—a curtain, a rug, a wall-paper, a chair, or a table, not truly needed, a vase, a clock, a mantle ornament, a piece of jewellery, a portrait, an etching. Now, in making such a purchase to please the eye, to make the chamber, the parlour, or the office more attractive, choose always that which shows good handiwork. Such a choice will last. You will not tire of it as you will of commonplace forms and patterns, and your children after you will value it as much as you do.

Let us not forget, however, that hand-craft gives us many things which do not appeal to our sense of beauty, but which are nevertheless of priceless value,—a Jacquard loom, a Corliss engine, a Hoe printing-press, a Winchester rifle, an Edison dynamo, a Bell telephone. Ruskin may scout the work of machinery, and up to a certain point in his enthusiasm for hand-craft, may carry us with him. Let us say without a question that works of art—the "Gates of Paradise," by Ghiberti, a shield by Cellini, a statue by Michael Angelo, a portrait by Titian—are better than any reproductions or imitations, electrotypes by Barbedienne, plaster casts by Eichler, or chromos by Prang. But even Ruskin cannot suppress the fact that machinery brings to every cottage of our day comforts and adornments which in the days of Queen Bess, or even of Queen Anne, were not known outside of the palace,—and perhaps not there; and let us be mindful that it is modern hand-craft which has made the machines of such wonderful productivity, weaving tissues more delicate than Penelope ever embroidered, and cutting the hardest metals with a precision unknown to Vulcan's forge. Machinery is a triumph of hand-craft as truly as sculpture or architecture. The fingers which have shaped the *Aurania* or the Brooklyn

suspension bridge are as full of art as those which have cut an obelisk from granite or moulded the uplifted torch of Liberty. Rowland's dividing engine, which with its unerring diamond plough traces forty thousand furrows upon an inch of the concave grating, silently and ceaselessly at work from day to day, that men may see more than they ever have yet seen of the glories of the sun—a machine like this has beauty of its own; not that of the human form nor that of a running brook, but the beauty of perfect adaptation to a purpose, secured by consummate hand-craft. The fingers which can make a mountain stream turn myriads of spindles, or transform rag heaps into perfumed paper, or evoke thousands of handy objects from brass and iron, are fingers which the nineteenth century has evolved. The hand-craft which has made useful things cheap is already making cheap things beautiful. See how rapidly, for example, pottery in this country has become a fine art. Let us hope that Americans will learn from the Japanese how to form and finish, before the Japanese learn from us how to slight and sham.

There is another duty to be enforced, which is this. All who have to deal with the young, whether parents or teachers, should see to it that children acquire hand-craft while they are getting rede-craft. Mothers begin right in the nursery, teaching little fingers to play before the tongue can lisp a sentence. Alas, this natural training has too often been stopped at school. Books have claimed the right of way; rede-craft has taken the place of honour; hand-craft has been kept in the rear. But now the ghost of Pestalozzi has been raised; the spirit of Froebel is walking abroad in the land; changes are coming in schools of every grade. The changes began at the top of our educational system and are fast working down to the bottom. What mean the new buildings which have appeared of late years in all our thriving colleges? They are libraries and laboratories,—the temples of rede-craft, and of hand-craft; they tell us that in universities, the

highest of all schools, work-rooms, labour-places, laboratories, are appreciated as book-rooms, reading-rooms, libraries; they show that a liberal education means skill in getting and in using knowledge; that wisdom comes from searching books and searching nature; that in the finest human natures the brain and the hand are in close league. So too in the lowest schools as far as possible from the university, the kindergarten methods have won their place, and the blocks, straws, and bands, the chalk, clay, and scissors, are in use to make young fingers deft.

Intermediate schools have not yet done so well. There has even been danger that one of the most needful forms of hand-craft would become a lost art, even good handwriting, and schools have been known to send out boys skilled in algebra and in a knowledge of the aorist who could not write a page of English so that other people could read it without effort. The art of drawing is another kind of hand-craft which has been quite too much neglected in ordinary schools. It ought to be laid down as a rule of the road to knowledge that everybody must learn to draw as well as to write. The pencil is a simpler tool than the pen. The child draws pictures on his slate before he learns the pot-hooks of his copy-book; savages begin their language with gestures and pictures; but we wiseacres of the schoolboards let our youngsters drop their slate pencils and their Fabers when we make them practice with their Gillotts and their Esterbrooks. We ought to say, in every school and in every house, the child must learn to draw as well as to read and write. It is the beginning of hand-craft, the hand-craft which underlies a host of modern callings. A new French book has lately attracted much attention, "The Life of a Wise Man by an Ignoramus." It is the story of the great Pasteur, whose discoveries in respect to germ life have made him world-famous. If you turn to this book to find out the key to such success, you will see the same old story,—the child is father of the

man. This great physiologist, whose eye is keen and whose hand is so artful, is the boy grown up, whose pictures were so good when he was thirteen years old that the villagers thought him an artist of rank.

Sewing, as well as drawing and writing, has been neglected in our ordinary schools. Girls should certainly learn the second lessons of hand-craft with the needle. Boys may well do so; but girls must. The wise governor of a New England State did not hesitate, a short time since, to say upon a commencement platform how much he had often valued the use of the needle, which was taught him in his infant school. How many a traveller can tell a like tale? It is wise that our schools are going back to old-fashioned ways, and saying that girls must learn to sew.

Boys should practise their hands upon the knife. John Bull used to laugh at Brother Jonathan for whittling, and *Punch* always drew the Yankee with a blade in his fingers; but they found out long ago over the waters that whittling in this land led to something,—a Boston "notion," a wooden clock, a yacht *America,* a labour-saving machine, a cargo of wooden ware, a shop full of knick-knacks, an age of inventions. Boys need not be kept back to the hand-craft of the knife. For indoors there are the type-case and the printing-press, the paint-box, the tool-box, the lathe; and for outdoors, the trowel, the spade, the grafting-knife. It matters not how many of the minor arts the youth acquires; the more the merrier. Let each one gain the most he can in all such ways, for arts like these bring no harm in their train; quite otherwise, they lure good fortune to their company.

Play, as well as work, may bring out hand-craft. The gun, the bat, the rein, the rod, the oar, all manly sports are good training for the hand. Walking insures fresh air, but it does not train the body or mind like games and sports which are played out-of-doors. A man of great fame as an

explorer and as a student of nature (he who discovered in the West bones of horses with two, three, and four toes, and found the remains of birds with teeth) has said that his success was largely due to the sports of his youth. His boyish love of fishing gave him his manly skill in exploration.

I speak as if hand-craft was to be learned by sport. So it may. It may also be learned by labour. Day by day, for weeks, the writer has been watching from his study window a stately inn rise from the cellar just across the road. A bricklayer has been there employed whose touch is like the stroke of an artist. He handled each brick as if it were porcelain, balanced it carefully in his hand, measured with his eye just the amount of mortar which it needed, and dropped the block into its bed without straining its edge, without varying from the plumb-line, by a stroke of hand-craft as true as the sculptor's. Toil gave him skill.

The last point which we make is this: Instruction in hand-craft must be more varied and more widespread. This is no new thought. Forty years ago schools of applied science were added to Harvard and Yale colleges; twenty years ago Congress gave land-scrip to aid in founding at least one such school in every State; men of wealth have given large sums for such ends. Now the people at large are waking up. They see their needs; they have the money to supply their wants. Have they the will? Know they the way?

Far and near the cry is heard for a different training from that now given in the public schools. Nobody seems to know just what is best; but almost every large town has its experiment, and many smaller places have theirs. The State of Massachusetts has passed a law favouring the new movement. A society of benevolent women has been formed in New York to collect the experience of many places, and make it generally known. The trustees of the Slater Fund for the training of freedmen have made it a first principle

in their work that every school which is aided by that fund shall give manual training. The town of Toledo, in Ohio, opened some time ago a school of practice for boys which has done so much good that another has lately been opened for girls. St. Louis is doing famously. Philadelphia has several experiments in progress. Baltimore has made a start. In New York there are many noteworthy movements—half a dozen of them, at least, full of life and hope. Boston was never behindhand in the work of promoting knowledge, and in the new education is very alert, the liberality and the sagacity of one beneficent lady deserving praise of high degree. These are but signs of the times, examples to which our attention has been called, types of efforts, multiform and numerous, in every part of the United States.

But it must be said that the wise differ very much as to what might, should, and can be done. Even the words which express the wants are vague. Something may be done by an attempt, even though it be rude, to put in classes the various movements which tend toward the advancement of hand-craft. Let us make an attempt, and present the following schedule for the promotion of hand-craft:

There are four preliminary needs.

(*a*) Kindergarten work should be taught in the nurseries and infant schools of rich and poor.

(*b*) Every girl should learn to sew, and every boy should learn to use domestic tools, the carpenter's or the gardener's, or both.

(*c*) Well-planned exercises fitted to strengthen the arms, fingers, wrists, lungs, etc., should be devised, and where possible, driving, riding, swimming, rowing, playing ball, and other out-of-door sports should be encouraged.

(*d*) Drawing should be taught as early as writing, and as long as reading, to all, and everywhere.

Subsequent possibilities are these:

(*a*) In elementary schools lessons may be given in the

minor decorative arts,—such as those of the Leland methods, for example.

(*b*) The use of such common tools as belong to the blacksmith's forge and the carpenter's bench may be taught at slight cost, as a regular class exercise, in secondary schools for boys, whatever be the future vocation of the pupils.

(*c*) In towns, boys who begin to earn a living when they enter their teens may be taught in every school to practise brick-laying, plastering, plumbing, gasfitting, carpentry, etc., as is done and well done in the Auchmuty schools in New York. Trade schools they are called; "schools of practice for workmen" would be a clearer name.

(*d*) In high schools, technical schools, and colleges, youth may learn to work with extreme precision in wood and metal, as they are taught in the College of the City of New York, in Cornell University, and in many other places.

(*e*) Youth who will take time to fit themselves to be foremen and leaders in machine shops and factories may be trained in theoretical and practical mechanics, as at Worcester, Hoboken, Boston, and elsewhere; but the youth who would win in these hard paths must have talent at command as well as time to spare. These are schools for foremen, or (if we may use a foreign word like kindergarten) they are Meisterschaft schools, schools for training masters.

(*f*) Youth who wish to enter the highest department of engineering must follow long courses in mathematics and physics, and must learn to apply their knowledge; if they wish to enter upon other branches of advanced science they must work in the scientific laboratories now admirably equipped in every part of the country. These are technical colleges for engineers, for chemists, for explorers, for naturalists, etc.

(*g*) Art instruction must be provided as well as scientific, elementary, constructive, decorative, and professional education.

At every stage, the language of the pencil and of the pen must be employed; rede-craft must be practised with hand-craft; and there must be no thought of immediate profit from that which is done in the early and rudimentary stages of the training.



DE JUVENTUTE: AN ADDRESS ON THE PREPARATORY SCHOOL

Delivered at the Opening of the New Halls of Berkeley School, New York

When the new halls of the Berkeley School in New York were opened in 1891, the following address on The Preparatory School was delivered before an assembly of the parents and teachers.

XVII

DE JUVENTUTE.

I WISH that with an invitation to deliver an address there always came a subject to be discussed. The principal of this school, with his knowledge of the art of composition, was well aware that a good theme, if it did not ensure a good ending would make at least a good beginning, and so he has asked me to speak this evening of Preparatory Schools for Boys,—a theme old as the Egyptians and as dry; new as the Berkeleyans and as inspiring. My discourse will be divided, like all Gaul, "into three parts." First I shall speak of Boys, then of Boys' Schools, and then of Preparatory Boys' Schools. My whole is *De Juventute.*

With Boys I begin. I am not sure that people are agreed upon the limits of boyhood. Shakespeare divides life into seven ages, of which the second is "the whining schoolboy, with his satchel and shining morning face, creeping like snail unwillingly to school," and other writers regard with a superstitious reverence the multiples of seven, as climacterics leading up to "the grand climacteric" of nine times seven; but I prefer to count the first twenty or twenty-one years as those of boyhood; then comes early manhood—another twenty years; the third score is that of middle age and maturity, and the fourth, of seniority. It is only centenarians who can truly be called old in these days of Gladstone, Manning, Ruskin, Tennyson, Bismarck, Moltke, and Kaiser Wilhelm; octogenarians and nonagenarians are only in advancing years. At Commencements, grey-haired men who have grandsons in college allude to their classmates as "the boys," and appear to think that calling a man young makes him so. But the boys I am to speak of have not been to

college; they are under their majority, and most of them less than eighteen years of age. I refer to the boys of Berkeley, of Exeter, of Andover, of St. Paul's, of Norwich, of Lawrenceville, and of hosts of other schools. I do not refer to the ghosts of boys, like one that went the rounds with Doctor Holmes when he returned, after fifty years or so, to the scenes of his youth and the academy of Andover. "The ghost of a boy was at my side," he says, "as I wandered among the places he knew so well." The ghost went with him even to the railroad station. "Give me two tickets to Boston," said the Autocrat of the Breakfast Table; but the little ghost replied, "When you leave this place you leave me behind you." "One ticket, then, to Boston" (said the tale-teller), "and good-by, little ghost."

But in reality do men ever say good-by to "the little ghost"? Is he not with us night and day, summer and winter, all our lives through, and are we sure that even death will part us from him? Ask the older men of your acquaintance and see if the ghost of a boy is not always near by. Ask even Doctor Holmes—long may we sip with him "over the tea-cups"—if the ghost of a boy whom he left at the Andover station did not fly through the air and meet him when he reached his house on Beacon Street. Ask him if the little ghost has never appeared in Cambridge or in Berkshire—yes, ask him if the ghost is not always with him, sometimes a recording angel, sometimes a prophet of immortality.

Is it not worth while for us older people to tell the boys that the little ghost will always keep them company—that as they grow older he will remind them perpetually of the past; every peccadillo will be remembered, and all healthy, honest deeds will be treasured in the cells of memory "to be used as directed"?

During a short time past there have been some very curious studies respecting the natural history of boys. Mr. Howells,

the novelist, has written a book that he calls "A Boy's Town," and in its pages he delineates, with the realistic touch of a master, the thoughts of a boy between his third and his eleventh year, who grew up in a country town on the Miami River. Literature is full of autobiographies, but here we have something quite unusual, something quite fresh in the literature of childhood. It is a picture drawn with accuracy by a writer who is still young, of the environment in which he was brought up. Here we may learn what an American boy surmised, discovered, and believed in respect to the world in which he was placed.

By a curious coincidence, whether conscious or unconscious I cannot say, a celebrated French writer, whose *nom de plume* is Pierre Loti, has drawn a companion-picture to that of Howells. In these two books we may compare the Hugenot and the American. The Frenchman, with a lively imagination and a love of adventure, was subjected to the depressing influences of a French country town. On the prairie all was freedom; in the province all was restraint. But we see how both natures rose above their belongings, how the self-determining power of the will made them both keen observers, graceful narrators, distinguished novelists.

One of the most remarkable studies of the inherent tendency of boys to organise society may be found in a paper, entitled "Rudimentary Society among Boys," that was written a short time ago by Mr. J. Hemsley Johnson, a connection of Reverdy Johnson, the Maryland statesman. In this paper we have the story of the life among the McDonogh schoolboys, in their country home a few miles from Baltimore. Several hundreds of acres, with predominant woodlands, belonged to the school, but the boys thought that the land and all that grew or was nourished upon it belonged to them; so they established their rights to the walnut trees and the birds' nests, and afterward to the portions of cultivated grounds. The germs of civilized society were soon

developed. "No right without its duty, no duty without its rights." Authority, law, penalty, inheritance, trade, circulating medium, were all evolved by boys.

Doctor Stanley Hall has published a kindred memoir, in which he has described the amusements of children. He calls his paper "The Story of a Sand Pile."

Perhaps we are coming to the time when the comparative biography of boys will take its place beside the comparative history of nations and the comparative geography of lands. We shall not only be able to distinguish how boys differ from men, and how their ways differ from those of girls; but we may learn how boys differ from boys, at different periods, in different families, with different talents, and with different hopes and expectations.

Boys may be classified into genera and species, not according to what they know, but according to what they are. The school affords an easy method of placing them in forms, grades, classes—almost as exact as that of the tailor who places them in coats of different sizes—but what a boy has learned is only one element in an estimate of his worth. It is more important to discover what are his capacities, to what intellectual and moral group he belongs; what are his tendencies toward nodosities that must be counteracted; what are his aptitudes to be cultivated; what are the habits that must be regulated so that they shall be helps and not hindrances in the battle of life.

With all the accumulated experience of mankind it is still extremely difficult to foretell what a boy will become. It is possible to predict the speed that a thoroughbred colt will approximate, as Professor Brewer has shown, or to anticipate the quality of a terrier or a pointer, of an Ayrshire or a Durham; but who is wise enough to discover in the nursery the coming statesmen, poets, scholars, and divines, or even to foretell what qualities will be developed in any group of schoolboys? Who can estimate the power of the individual,

the self, the ego, that dwells in each bodily frame, and asserts in the course of life its supreme authority? One of the most impressive sermons delivered by Charles Kingsley in Westminster Abbey was a sermon on the monosyllable, the monogram, the monocule I.

No parent, no teacher, no physician, no philosopher is wise enough to speak infallibly upon such important questions. There are no logical formulas, no canons of criticism, no physiological tests by which conclusions may be reached. Nevertheless, there are signs and tokens which indicate the probabilities, and by these the wise instructor, the observing mother, the prudent father will be guided.

One way of arriving at a knowledge of boys is by reminiscence. Old men like to renew their youth by retrospection. They imagine themselves young because they recall so vividly the days of their childhood, but they are in danger both of Scylla and Charybdis. They may err by vanity and imagine that they were more excellent than they really were; or they may err by modesty, and blame themselves for faults which were not so personal as they were circumstantial. In rare cases we may get an introspective view of a boy's life, written while he was a boy, but I do not remember any masculine diary like that of Marie Bashkirtseff, the prodigy of egotism, the genius run wild, the morbid self-auscultator who could listen to the beatings of her own heart and register the sounds of her own respiration.

It is almost a fashion in these days for men who have acquired distinction to write the memoirs of their boyhood. Two of my colleagues, Professor Gildersleeve, the Grecian, and Professor Newcomb, the astronomer, have lately published accounts of the "formative influences" to which they were subjected. Not long before, President Dwight and President A. D. White wrote similar articles. Noteworthy Englishmen—Tyndall, Lecky, Farrar, and Frederic Harrison among the number—have written the story of their

youth. Ruskin, poet, artist, naturalist, philosopher, is revealing under such cryptographic titles as "The Springs of Wandel," "Herne Hill Almond Blossoms," and "The Banks of Tay," the life of a boy as it appears to a septuagenarian. Franklin wrote his autobiography; so did Gibbon, Marmontel, and Rousseau; and so we can go farther and farther back in history till we reach the Confessions of Saint Augustine. It is interesting to notice that among the writers of our own day many fall back on the term of the day, heredity, which seems to serve equally well as a scapegoat and as a mentor.

The sum of all that I have been able to discover from these and many other writings, and from innumerable opportunities to study boys, may be very briefly stated.

Every boy differs from every other boy in character as he does in appearance. Even twins, while they closely resemble one another in many respects, may differ essentially in fundamental tastes and talents. Mr. Galton says that extreme similarity and extreme dissimilarity are nearly as common between twins of the same sex as moderate resemblance. If this is confirmed, what becomes of heredity?

The corollary is obvious, that plans of education should as far as possible be adapted to individual requirements; but as every boy is preparing for life among his fellows, and as Providence has so ordered it that he is strongly influenced by other boys, it follows that to treat him alone, away from comrades, in the backwoods, in a cell, under exclusive instruction, is only justifiable under extraordinary circumstances. He comes into the world not only as an individual, with his own responsibilities and possibilities, but as one of a family, a neighbourhood, a race, from which he cannot be extricated except by death. Isolation is therefore as unnatural as it is undesirable and difficult.

Every boy is influenced both by his inheritance and his environment. Yet the laws of heredity in the human species

are not well enough known to give us any certain indications of what the child of any parents will become, while the conditions in which a person lives are as complex as the elements that nourish his body, the air he breathes, the water he drinks; as subtle and insinuating as the tones of the voice, the glance of the eye, the nod of the head, the pressure of the hand; as influential as religious faith, the forms of civil government, the habits of society, the lessons of antiquity, the examples of good men; and as trifling as a careless word, a thoughtless joke, a timely hint, a friendly warning, or a loving smile.

Until he reaches maturity every boy requires positive guidance from those who have had a longer experience in the ways of the world. It is always cruel, and it may be criminal, to allow a youth to experiment for himself upon conduct—to say that he must sow his own wild oats, that experience is the best teacher, that he must choose his own course. Every boy is entitled to know what older persons have discovered of the laws of conduct, and to receive restraint, caution, and warning until his eyes have been opened and his powers of judgment developed. Nobody questions that he ought to be taught the laws of health, of diet, of poisons, of climate, or the laws that protect his person and his property; and it is surprising that anybody should question his right to initiation, by stringent discipline, into the laws of intellectual and moral well-being. Every boy, whether he wishes it or not, should be trained. Yet the contrary doctrine is covertly held, if not openly avowed, by many a tender mother and by many a generous father. Note the autobiography of John Stuart Mill.

Neither precocity nor dulness is any certain index of the future of a boy. Only a wise man can tell the difference between the priggishness of conceit and the display of unusual talent, and it takes a superlatively wise man to devise right methods for exciting temperaments that are dull, or, on the other hand, to guide a genius. Abnormal brilliancy

and abnormal slowness are usually the result of abnormal conditions, and physiologists are only just beginning to show to ordinary parents how these unusual conditions may be discovered and treated. When we see a man we cannot tell what sort of a boy he came from, and when we see a boy we cannot tell what sort of a man he will make. The great emperor Charles V., who grew old prematurely, was slow in his development, and was nearly twenty-one before his beard grew. The facts lately collected by Doctor Scripture in regard to mathematicians show how impossible it is to prophesy in respect to the development of hypothetical genius. Some who have risen to great distinction, like Gauss, Ampère, Safford, were precocious mathematicians in their youth; another boy of extraordinary parts, Thomas Fuller, the Virginia calculator, remained an idiot. Daniel Webster, greatest of New England orators, broke down, we are told, in his early speaking. Most boys that run away from home take the road to ruin; but the liberator of Greece, Sir Richard Church, who died a few years ago in Athens, honoured by a public funeral and by a monument raised by the Greek nation to commemorate his services, was a boy of under size, of Quaker parentage, who, before he was sixteen years of age, ran away from home, and "took the king's shilling."

The influence of modern psycho-physiological inquiries upon the coming generations is still undetermined. The good that is aimed at may, perhaps, surpass the evil that is done. Certainly, in these days, when morbid self-consciousness, extreme sensitiveness, bashfulness, shyness, and timidity are so frequently apparent, the wise parent, the wise teacher will hesitate before encouraging in his own family or his own school too intense and too prolonged introspection. Give the boys plenty of open air, and when they cannot have this, encourage within-doors exercise in hand-craft, the use of tools, and knowledge of the books of sports—not to the exclusion of other studies, but as collateral security that the

mind and the body shall be simultaneously developed. As an example, the stories that we have of Daniel Webster's boyhood are very instructive. You may find them in Morse's life of the great orator of New England. The infant was a rather sickly little being at its birth, and some cheerful neighbours predicted that he would not live long. For many years the boy was weak and delicate. Manual labour, the common lot of farmers' sons, was out of the question in his case. But now hear the other side of the story. "Young Webster was allowed to devote much of his time to play, to play of the best sort, in the woods and fields." The bar and the Senate and the Cabinet tell the conclusion of a career which began with such meagre hopes.

Healthy, out-of-door lives, directed toward objects of enjoyment, of observation, of sport, of acquisition, are better for boys than exclusive devotion to books, and especially than habits of introspection, self-examination, casuistry, journal-writing.

Now let us consider schools.

Of all the facts that the world has accumulated with respect to the art of training, but little has been reduced to intelligible terms respecting the methods of producing this or that variety of character. Certain general principles have certainly been established, like the vague laws of health: "Eat nothing improper, drink nothing improper, do nothing improper, and you will be well;" but how shall we counteract the insidious microbe that may ruin all our expectations of health and thwart our incessant carefulness? "Go to school, learn your lessons, win you diplomas," are directions as good as they are simple; but how shall the bacteria be got rid of that appear in the forms of bad company, laziness, lack of interest in certain branches of study, inability to master the calculus or the Greek subjunctive, deceitful facility, corrosive vanity, excessive versatility, unusual obstinacy, or that incapacity to accept discipline which is the exact reverse of

what George Eliot calls "genius"? Why is it that no school of painting can promise to make a great painter of any candidate, however promising; that no college can assure a parent that his son will become a scholar; that no lesson in English composition will make an orator or a poet; that prolonged studies in history and politics do not produce statesmen? Is it not still more remarkable that the incessant care of the best and wisest parents and teachers is so often counteracted by the examples and the temptations of boyhood and manhood.

Schools are not restricted to boyhood. They are the arrangements of nature and Providence and society, by which, at every stage of our existence, we are prepared for something beyond. The cradle is a school, and so is the nursery. The kindergarten and the infant class are of a little higher grade. Grammar-schools and colleges come next. Then come the high-schools that we call universities, with their departments of law, medicine, theology, and the liberal arts. All along the course are supplementary schools, spreading out their tentacles for the capture of those who are not bound elsewhere. Sooner or later for us all begins the pedagogy of life—the school of practice, where the lessons of the books are applied to the affairs of men. So Milton sings:

> "All is, if I have grace to use it so,
> As ever in my great Task-master's eye."

Likewise George Herbert:

> "Lord, with what care thou hast begirt us round!
> Parents first season us, then schoolmasters
> Deliver us to laws; they send us bound
> To rules of reason, holy messengers."

From the cry of the infant to the last breath of the centenarian, life is one long school, without holidays or vacations, Each day has its lessons, each decade its reviews.

We often read in the newspapers that some prominent person was a self-made man. Francis Lieber used to ridicule this phrase by saying that he should like to stand by while a man was making himself. But the absurdity of such a phrase has never been more clearly stated than by Mr. Charles A. Dana, in his recent eulogy of Horace Greeley. Mr. Greeley is an example, almost as striking as Benjamin Franklin or Abraham Lincoln, of what a man may become without scholastic discipline. The three were men of exceptional talent, exceptional vigour, and exceptional power of will. Mr. Dana says of Greeley: "He was a man of almost no education; indeed, of no education at all except what he had acquired for himself," and then he adds these sage words: "The worst school that a man can be sent to, (and the worst of all it is for a man of genius), is what is called a self-education. There is no greater misfortune for a man of extraordinary talent than to be educated by himself, because he has of necessity a very poor schoolmaster. There is nothing more advantageous to an able youth than to be thrown into contact with other youths in the conflict of study and in the struggle for superiority in the school and in the college. That was denied to Mr. Greeley. He knew no language but his own; but of that he possessed the most extraordinary mastery."

And now I have a few words to add in respect of what is commonly called "the preparatory school," the place where boys are prepared for college. Not all its pupils will go to college, it is true, but all have chosen, or have been chosen, to follow a course of training which, by the common consent of educated men, leads up to a college course. "He was fitted for college" is a phrase that marks an epoch in education quite as distinctly as the phrase a "Bachelor of Arts." It means that a youth of fair parts, during his teens, has been taught the elements of mathematical science, and two or three languages in addition to his mother-tongue; that he

has been introduced to a knowledge of the natural world, and that he has some acquaintance with his own country and his own stock. It should also mean that he has learned the difficult art of study, and has acquired good habits of attention, memory, and simple, accurate expression. In addition, the phrase is beginning to imply that the boy has begun the study of some branch of science, and has at least learned how to observe the phenomena of the animate life and of the inanimate forces by which he is surrounded. Side by side with these intellectual lessons moral discipline is also given.

Certainly one of the first requisites of a good preparatory school is bodily discipline. This is partly to be secured by watchfulness in respect to posture, diet, repose, gymnastics, within the school walls; it is to be still further promoted by abundant exercise in the open air. Manly sports with the bat and the oar, running, jumping, bowling, swimming, rowing, riding, fencing, boxing, and, if possible, sailing, are all to be encouraged. Nor is military training to be underrated. The systematic exercise of every limb and every muscle is desirable, not under rules too rigidly laid down by the higher authorities, but under regulations spontaneously developed by the youth. It is generally conceded that just now, in England and this country, there is danger of intemperance in sport. This may be less disastrous than intemperance in drink or meat; nevertheless there is such a thing as inebriety in athletic games. I do not refer to the danger of broken limbs and bruised faces, for they are rarely enduring injuries, but to the danger of unfair rivalries, of bad associations, of peculiar temptations in the anticipation and enjoyment of victory or in the depression of defeat, in the neglect of other and higher scholastic duties, in the waste of time and money upon costly journeys, perhaps in extravagant hospitality. The boys themselves must be encouraged to correct these tendencies, but they have a right to expect that we older

boys will remind them of their highest obligations and encourage their fulfilment. With the reasonable control which players, teachers, parents can readily exercise, and which the young ladies and the newspapers might greatly encourage, the just medium can be secured, and athletics continue to be an essential factor in the training of American boys.

The importance of mental habits is sometimes forgotten in the eagerness to impart knowledge. Perhaps the colleges are more to blame for this than the schools; for the colleges receive their pupils on examination, and examinations are contrived so as to show sometimes what the freshman knows and sometimes what he does not know. Usually the examiners have not time, if they have the disposition, and, if they have time and disposition they may not have the capacity, to put the candidate to any other test than his ability to answer certain questions.

Examinations are a great stumbling-block not only to the pupil, but also to the examiner, and I shall not now discuss this vexatious theme. However, this much may be said. That teacher fails who keeps the coming examination perpetually in sight. It is his business to think of the minds of his pupils individually, to strengthen, prune, stimulate, train the various qualities exhibited by each scholar. He should indeed impart knowledge, not forgetful that it is as true in the examination-room as anywhere else, "if there be knowledge, it shall vanish away"; but he should also enforce the formation of habits—and especially at the schoolboy age—of close attention, tenacious memory, and accurate statement. These three mental virtues are not unworthy to be named after faith, hope, and charity, the trinal virtues of Saint Paul —attention, memory, truth, and the greatest of these is truth.

The intellectual lessons that boys receive should be so imparted that they may promote the formation of moral habits. Accuracy, carefulness, truthfulness of statement, fidelity,

thoroughness, courtesy, self-control, deference, consideration, respect, temperance, these are virtues that may readily be developed while the boy is crossing the *pons asinorum* or stumbling over a sentence of Tacitus.

"Refrain to-night," said Hamlet to the queen, "and that shall lend a kind of easiness to the next abstinence; the next more easy; for use almost can change the stamp of nature and master the devil or throw him out with wondrous potency."

The idea of the preparatory school has probably been more completely developed in England than in this country, and the names of Eton, Harrow, Rugby, Wesminster, and Winchester are almost as famous as those of Oxford and Cambridge. Rugby is especially familiar to us, partly because of the remarkable character of Thomas Arnold, admirably portrayed by Dean Stanley, and partly because of the adventures of Tom Brown—known to every schoolboy, and almost as real as the doctor himself. Worthy to be named with the story and the memoir are the verses of Matthew Arnold on Rugby chapel. "Through thee," the poet says of his father,

> "I believe
> In the noble and great who are gone;
> Pure souls, honour'd and blest
> By former ages. . . .
> Yes, I believe that there lived
> Others like thee in the past;
> Not like the men of the crowd
> . . .
> But souls temper'd with fire,
> Fervent, heroic, and good—
> Helpers and friends of mankind."

We know less about Mr. Edward Thring, the head-master of Uppington School, who has recently died, but it is clear that he too was born to be a leader and teacher of boys. I have been acquainted in this country, intimately, with a

kindred soul, an English schoolmaster, who, first in Trinity School of New York, then at Lake Mohegan, then in a college, and at length in a university, exercised over all the youth that knew him the strongest intellectual and moral influence. Long as they live his pupils will revere Charles d'Urban Morris. Such men are robust. Their virility is shown in bodily exercises, in scholarship, in politics, in religion. They quit themselves like men and are strong. Happy the land where they are engaged in the service of the boys!

Characters like those just mentioned have been developed in this country. I could name some who are living, beloved, honoured, obeyed, and followed. Among the departed, Doctor Abbot of Exeter and Doctor Taylor of Andover are particularly worthy to be remembered. But, on the whole, the tendency of our times is not toward the fostering of such teachers. Many of the brightest Americans are attracted by business. The three professions traditionally called learned, and the modern scientific pursuits enlist great numbers. Of those who devote themselves to teaching, the most prefer to enter the service of the college or the university. Few only, so far as my acquaintance goes, seek permanent careers in the service of boys' schools; few declare that they will be satisfied with the opportunities and emoluments of a good and faithful teacher. Hence, one of the most delightful of intellectual pursuits, one of the most useful, one of the most honourable, one of the most sacred, is in danger of falling into the hands of inferior men. The only remedy that I can see is for the head-masters, trustees, and parents to be on the watch, and when a born teacher appears, engage him, reward him, encourage him, retain him. See that his path is free from stones, that he is not overworked or harassed, and that he is kept contented in his lot. Let him be sure that as much respect and as much income will be his as would fall to his portion were he to enter the pulpit

or be called to the bar. Let it never be forgotten that the teacher's gifts are as rare as the poet's. The methods of education can make scholars, pedants, specialists, and a very narrow man may live in his den, and benefit the world by patient observations and minute researches. But no process has been discovered for making teachers. They are like gems, that must be found, for they cannot be produced. I would rather place a schoolboy under one "all-round man," whose manners, morals, and intellectual ways were exemplary, and who was capable of teaching him Homer and Euclid, than under a group of specialists selected simply as mathematicians, physicists, and linguists. Later on, when the character of a boy is established, when his habits are formed, when he knows how to study, when he has learned the art of acquiring knowledge and the graces of expression, let the specialists take hold of him. Even then let it be provided that the specialists shall not be too narrow. If possible, choose scientific men from the school of Agassiz, Henry, Bache, and Dana; and linguists from the school of Woolsey, Felton, Whitney, Drisler, and Gildersleeve—men who know *multa et multum*.

As to the curriculum of a preparatory school, this is not the place to measure its limits or its requisites, for they are virtually determined by the college authorities, not by the schoolmasters. If the colleges say that they will not admit as scholars those who fail to show a knowledge of certain prescribed studies, the preparatory school must teach those studies or must close its doors; there is no middle course. Boys are fitted for college in a preparatory school, or they are not—that is the only question. Nevertheless, I believe that the day is coming when there will be a revision of our educational creed, when the colleges will not make their entrance examinations such rigid tests of memory as they are now, but will contrive to make them tests of power. Is a boy capable of carrying forward the studies of the college?—

that must be found out. His capacity to retain and repeat what he has learned is one sign of his qualifications, but there are many others which a nicer analysis may employ. The qualitative test is quite as important as the quantitative. Not the size of the brain, but its structure, determines its worth. The possession of ten thousand facts may distinguish an idiot, but an idiot gives no proper emphasis; he does not perceive the difference between the trifling and the fundamental. Yet an extraordinary memory may also distinguish a scholar. Lord Macaulay, for example, was heard to say that if by some miracle of vandalism all copies of "Paradise Lost" and the "Pilgrim's Progress" were destroyed, he would undertake to reproduce them both from recollection. A scholar holds his knowledge in well-arranged groups, under certain principles, under certain laws; he is constantly exercising his judgment, his discrimination, his reason. He knows where to lay the stress; he does not confound the essential with its accidents.

Whenever the time comes for a revision of the curriculum of the preparatory school, three subjects should receive much more attention than is now given to them. The study of science should be so pursued that the habit of close observation and of reasoning upon ascertained facts should at least be initiated. Nature should be approached by the schoolboy as a willing and ever-present teacher. Her lessons should be the delight of every adolescent. When we remember that in contemplating the heavens, in watching the life of plants and animals, in the observation of the modes of motion, and in studying the inorganic world there are innumerable and infinitely varied opportunities to awaken curiosity, to train the eye and the hand, to exercise the judgment, to reward investigation—how strange that so little progress is made in the introduction of scientific studies in elementary education! Modern languages also, especially French and German, are nowadays indispensable in a liberal education; and they are

much more readily acquired in childhood than in maturity. How are they to get just recognition in the preparatory schools? An acquaintance with the Bible should also be required of every schoolboy. College professors have lately been showing how ignorant the youth of America are of the history, the geography, the biography, and the literature of the sacred books. I do not refer to its religious lessons, but I speak of the Bible as the basis of our social fabric, as the embodiment of the most instructive human experiences, as a collection of poems, histories, precepts, laws, and examples, priceless in importance to the human race. These Scriptures have pervaded our literature. All this inheritance we possess in a version which is unique. Its marvellous diction, secured by the revisions of many centuries, and its substantial accuracy, the care of many generations of scholars, are beyond our praise. But how little study does the schoolboy give to this book in secular or sacred hours; how ignorant may he really be of that which is supposed to be his daily counsellor! Science, modern languages, and the Bible have been so long neglected in preparatory schools that it is extremely hard nowadays to find effective teachers for these subjects. There is no consensus as to books, no tradition respecting methods. Perhaps we are waiting for the waters to be disturbed by the angel of deliverance, but we shall wait in vain unless we put forth efforts of our own to reach the true remedies. The day will come for better things; we can see its approaches.

Meanwhile, it is just as well to remember that there is nothing sacred in our present curriculum. It is a method which generally produces good results, but it is no catholicon. Its defects are perceived by this generation, and the next will provide the remedies. Thus slowly move the wheels.

If now you ask me to sum up the impressions that I have endeavoured to convey, remember that in speaking of a preparatory school, even in the surroundings of this well-

equipped establishment, your thoughts have not been directed to the buildings, the apparatus, or the library, to the honourary patrons, or to the titular distinctions of the staff, and that even the gymnasium and the oval have not been made unduly prominent; but you have been reminded, parents, teachers, scholars, that a good preparatory school for boys is a place where those who wish a liberal education, and those who think that a preparation for college is also a preparation for life, are engaged in acquiring physical, intellectual, and moral habits.

> "Self-reverence, self-knowledge, self-control,—
> These three alone lead life to sovereign power."

Biography and psychology agree in teaching us that in the development of the man from the boy, four factors are always at work: heredity, environment, education, and volition. If a simpler form of speech is preferred, let it be this,—our parents, our homes, our schools, and our wills make ourselves.





GREEK ART IN A MANUFACTURING TOWN OF NEW ENGLAND

Norwich, Connecticut, one of the oldest and one of the most beautiful towns in the State, has two characteristics. It is the home of refined and intelligent people, naturally conservative of their early English traditions, and ready to lend a hand in all philanthropic, educational, and patriotic movements for the good of society. It is also the seat of extensive industrial establishments, where several thousands of persons are engaged in handicrafts. The Norwich Free Academy, a high school of the first class, founded more than thirty years ago by private subscriptions, protects the interests of both these classes, for it offers a superior education on terms that all can accept. Mr. William A. Slater, the son and heir of a well-known manufacturer, has lately given to this Academy—where he was prepared for Harvard College—a large memorial building, one hall of which was designed for a Museum. This hall he has now filled with a choice collection of casts, photographs, coins, examples of ancient armour and plate, and other objects brought together at his request by Mr. Edward Robinson of the Museum of the Fine Arts in Boston. The Museum in Norwich was opened November 22, 1888. Professor Norton, of Cambridge, gave the principal address—a noble appeal for the encouragement of the Fine Arts, and a beautiful portrayal of their influence upon the highest interests of mankind. When he concluded I was called out by the principal of the Academy, Dr. Keep, as a native of Norwich and a school boy of the old Academy, and I spoke as follows on the possible influence of the Slater Museum upon the education and industry of Norwich.

XVIII

GREEK ART IN A MANUFACTURING TOWN OF NEW ENGLAND

In the opening of a museum where ancient Greek art predominates, may I be allowed to quote certain lines of ancient Greek poetry, which, like many of the statues here brought together, have come down to us in fragments. I bring these lines before you, not in their original form, "but as a reproduction of the antique."

Two fragments of Sappho, first joined by Lachmann, have thus been rendered:[1]

"The bowl of ambrosia was mixed, and Hermes took the ladle to pour out for the gods; and then they all held goblets, and made libation, and wished the bridegroom all good luck." Now if I may, in the presence of Dr. Keep and all these learned persons from far and near, reiterate these words, I will construe them as follows: *"The bowl of ambrosia was mixed,"* that is, these works of art have been brought together; *"Hermes took the ladle"*—the historian of the Fine Arts has told us of the meaning of these treasures; *"They all held goblets"*—our cups are running over; *"they made libation, and wished the bridegroom all good luck"*—so we pour out our gratitude and wish Mr. Slater all good luck. May he live a hundred years, and be happy!

My opportunity on this platform is to utter the thanks of the schoolboys and schoolgirls of Norwich, past, present, and to come. When I remember how the Academy boys in my youth read their Rollin's Ancient History, and pored over the pages of old Lemprière, without so much as a marginal cut to aid their imagination, how photographs and casts

[1] By Henry T. Wharton, of Oxford, in his "Sappho," Lond., 1887.

were unknown, and the tale of a returning traveller was almost as rare as the voice of a nightingale,—and then turn to the wealth of illustrations collected beneath this roof—books, plates, photographs, casts, coins, and reproductions of ancient plate—a collection unsurpassed, perhaps unequalled, by any that is owned by any college in the land, the libation of admiration and gratitude is most heartily poured out. Here is a museum already well filled with objects carefully chosen, charmingly arranged, well catalogued, and freely opened. "Well thought out, well wrought out, well brought out." A new intellectual force has been here introduced—destined to awaken, develop, and instruct the love of beauty. Consider what this means. "The poetic passion, the desire of beauty, the love of art for art's sake, is most rewarding," says Pater, "for art comes to you professing to give nothing but the highest quality to your moments as they pass, and simply for the moment's sake." Let us consider this utterance with an immediate reference to the establishment of a museum in the town of Norwich. What will be its educational value?

Some young artists will certainly be helped by these collections at the beginning of their careers. The creative mind may yet be born or bred in this community—it may be that one is here already—who will find his aspirations quickened, his soul enlarged, his knowledge extended, and his skill enhanced by the sight of these masterpieces of antiquity and of the renaissance. Let me remind you that the one American painter of the revolutionary period, whose works are now remembered, Colonel John Trumbull, was a schoolboy in Lebanon before he graduated in Harvard College, and that one of the very few sculptors whose works are held in honour by their native State was a schoolboy in Colchester before he went abroad. I remember visiting Bartholomew, this Connecticut sculptor, in his studio in Rome, and I heard him quote, with the bitterness of conscious yet unencouraged

talent, words with which the father of Colonel Trumbull endeavoured to dissuade his son from the business of a "limner"—"My son, remember that Connecticut is not Athens." If talent appears in our day, opportunity stands ready to extend a welcome; much more will genius be greeted by a helping hand.

But this museum will benefit a wider circle than that of the prospective artists. To any student it may prove to be the interpreter of history, the key to human culture, the guide to monuments of past civilisation. Here light is thrown upon the art, the architecture, the decorations, the coinage, the biography, the mythology, the religion of the most interesting epochs of the past. New interest will likewise be imparted to the study of ancient literature, whether the classics are read in their original form or in the masterly translations which modern scholarship has given us. Nor will this museum interpret ancient books alone. The visitor to these galleries will soon begin to ask for Winckelmann's "History of Art," and for Lessing's "Laocoön"; Wordsworth's "Greece," and the records of recent discoveries in Olympia, Mycenæ, and Troy will be read with fresh interest; Ruskin, Taine, Pater, Symonds, Hamerton will be in demand; the Earthly Paradise will be revisited, and the Marble Faun will renew its youth; nor will the new volume of Lanciani, carried through the press by the same skilful hands that have arranged this museum, fail to be read, as it describes with the enthusiasm of an archæological Columbus the discovery of sites and monuments unknown a few years since.

To many in this audience these will seem the highest, and perhaps the only educational uses of a museum like this. Yet when I remember that most of the inhabitants of this town—I should think at least three-fourths—are dependent for daily bread upon the daily toil of somebody; that they owe their livelihood, directly or indirectly, to the industry of manufactures, I shall offer no apology for dwelling upon another re-

sult which may be expected to follow this auspicious beginning—a result, less obvious, perhaps more subtle, than those before mentioned, but not less enduring. I allude to the influence of art upon industry.

With other New England towns, Norwich prospers, not because it is near the supplies of coal and iron, like Birmingham, Manchester, Pittsburg, and Liège—but because of the skill it employs in using the products that are brought here from a distance. It applies brains to labour. The people are ingenious, enterprising, thrifty, and industrious, and they know how to turn the raw materials of distant regions into the finest of cotton fabrics, the best of printing paper, into complex machinery, pistols that will hit the mark, blankets, stoves, and I know not how many other products of the loom, the machine-shop, or the foundry. This is just as it should be. But far-sighted manufacturers are well aware that in all these forms of industry the competition of the world is bringing forward new rivals. Beyond the Alleghenies, and far south of Mason and Dixon's line, staple manufactures are now established. To maintain its pre-eminence, Norwich must continue to apply its brains to its labour; it must do what it undertakes better than can be done elsewhere. It must continue to devise labour-saving processes and machines, and it must make its products attractive. The art-element in Norwich manufactures is as yet scarcely manifested. In the future, beauty must be added to utility; to solidity, grace must be given; art must be allied to craft. Norwich must remember that the manufactures of Paris, Vienna, and Berlin spread the wide world over because they are so attractive. No amount of duties will exclude them. People who have the money will buy what they like, and the number of people who like the beautiful in form, in colour, in material, and in decoration increases far more rapidly than the population.

Now to show the bearing of these remarks on the possi-

bilities of this museum, let me repeat a story, told before. Nearly twenty years ago, in company with a citizen of Norwich whose name always awakens the sentiment of admiration and gratitude, Governor Buckingham, the patriot, I visited a well-known factory where the best and most beautiful of carpets are made—those which are known in the market as English Brussels. "Where do you get your designs," said I, "from the English manufacturers?" "Oh, no," said the superintendent, "our patterns are original." "Do you mean that they are the work of American designers?" "Not that," he replied, "they are sent to us by mail from Paris." "Why don't you bring the designers here?" "We have tried to," was his answer, "but they will not come. They say that they would *dry up* in New England. Here is nothing suggestive; nothing stimulating; nothing critical in the way of art."

Now for the other side. What makes Paris so fertile in the arts of design? Why is it that in every branch of ornamental industry French taste is preferred? Why are *articles de Paris,* the bronzes, the jewellery, the silks, the laces, the stationery, the upholstery, the tapisserie, the book binding, the clocks, the porcelains, the vases, the ornaments of every sort, so attractive, so beautiful? It is because of the art employed in their design. And whence this art? Go back two hundred years or more and you will find in public life at Paris one of the most versatile, enlightened, and influential statesmen that has ever lived—a statesman whose renown does not rest on strategy or war, but who won the proud title of the Minister of Peace. This statesman was Colbert. Not all that is known as Colbertism is to be upheld,—but one thing he did which entitles him to the highest praise. He gave all the influence of his high station to the encouragement of science, literature, and art. He laid the foundations of the Louvre, that great museum of art. A very large number of the paintings and statues in that collection were bought by

his command. At his request, the Abbé Benedetti in Rome caused casts to be made of all the most celebrated statues and vases, and a little later, Evrard, Director of the Academy of Rome, was directed to copy and send to Paris everything beautiful of whatever kind. From that period until now Paris has maintained its supremacy in artistic manufacture.

Perhaps at some future time Norwich may have an exhibition of "Arts and Crafts" like that which has recently been held in London. Certainly to the promotion of Arts and Crafts the collections of the Slater Museum will tend. But let it not be forgotten that beyond the pleasure to be afforded to the purchaser, the pleasure to be afforded to the workman is incalculable. Upon this point, the impressive words of Professor Norton, to which we have just listened, need no emphasis from me. Let us take his admonitions home. But let me commend to the authorities of this academy another word of the orator of the day. In speaking of the present condition of intellectual life in America, he says:

"It is to the institutions which provide the means of the highest education that the best interests of our national life are specially committed. . . . If life in America is to become worthy of its unparalleled opportunities, . . . it is by the support, the increase, the steady improvement of the institutions devoted to the highest education of youth."[8]

Let the managers of this academy enlarge its facilities, increase its staff of teachers, widen the opportunities to profit by this noble gift.

I will not detain you longer—ladies and gentlemen who have favoured me with your attention—from a return to the galleries now open to you, but as I began with a fragment from Sappho, I will close with a fragment from Sophocles

[8] Professor Norton in the *New Princton Review*, November, 1888.

and with these words bid you enter the hall where the faces of Sappho and of Sophocles will welcome you:

"Let us now go, O boys, to where the wise
Impart their knowledge of the muses' arts,
Each day we need to take some forward step
Till we gain power to study nobler things."
(Plumptre's Version.)



A STUDY IN BLACK AND WHITE



Mr. Morris K. Jesup, of New York, presented to the Hampton Normal and Industrial Institute a building which he named after General S. C. Armstrong and Mr. John F. Slater, the Armstrong-Slater Trade School Building; and by request of the authorities, the following address was delivered when the building was thrown open to the public on November 18, 1896.

XIX

A STUDY IN BLACK AND WHITE

An occasion like this suggests delightful memories,—such as those to which your attention has been called,—of Slater, the philanthropist; of Armstrong, the inspiring leader; and of many others who have worked in their spirit. It suggests congratulations to Dr. Frissell and his staff of teachers, on this addition to their means of instruction. It suggests encouragement to all who are engaged in the uplifting of the Negro, and anticipations of even better results in the future than have been attained in the past.

What does this assembly represent? On the one hand, those who stand for the best that the white race has produced, the fruit of many generations, developed under the sunshine of freedom, religion and education; and, on the other hand, those who represent the capacity, the hopes, and the prospects of races but lately emerging from bondage or barbarism, error and illiteracy. The light-bearers are here, ready to hand to the light-seekers the torch which shall illuminate the path of progress.

Have you never seen, in a lecture on physics, two mirrors so constructed and so placed that the rays of a lighted candle are collected upon one reflector, and sent to the opposite reflector, and there so concentrated as to light a candle placed in the focus of the latter? This image may illustrate our attitude to-day. Those who have freely received the light bestow it upon those who stand in need. Giving does not impoverish. The two candles shed more light and heat than one.

What does this occasion signify? It signifies that the

work of Hampton, already most successful, is to be enlarged and made better. A new building, constructed by private generosity, is now opened for instruction in the methods which underlie those trades that must be practised in every part of the country.

Under these circumstances, I invite you to "A Study in Black and White," leading up to an appreciation of the rewards of skilful work, the pleasures of exertion.

Two papers have lately been prepared for the John F. Slater Trustees by Mr. Henry Gannett, of Washington; the one devoted to the movement of the coloured population; its vitality, its rate of increase in different regions and its tendencies toward city life; the other, an original study (not to be found elsewhere) of the occupations of the Negro, as shown by the data collected in the last United States Census. With these statistics should be read Dr. Curry's paper in the same series, on the Progress of the Education of the Negro; and a still more recent summary, by the same high authority, on the general progress of Education in the Southern States during the last thirty years, presented last October to the Trustees of the Peabody Educational Fund.

The study of these papers will assure anybody that the results that have been accomplished since the war are simply astounding. Great exertions, indeed, have been put forth, and great sacrifices have been made. Large sums of money have been contributed by private individuals, and generous appropriations have been devoted to public instruction in almost every Southern State; but the outcome far surpasses the highest anticipations. For example, in the Hampton Institute, we may see, in a microcosm, what is in progress throughout the vast territory of the United States. I will not, however, deny that Hampton stands at the front among the agencies devoted to the education of the coloured people.

Never in the record of mankind, before our times, have

millions of slaves—whose ancestors in former generations had been the children of ignorance and superstition—received in a day the privileges of citizens, become equal before the law and entitled to all the rights, duties, and responsibilities of freemen. We are dealing at Hampton with a few hundreds of the more intelligent and capable of their race. The same work goes on at Tuskegee and elsewhere, but these select and favoured scholars are chosen out of eight millions of the blacks, and these eight millions are but the forerunners of a hundred millions who will come after them. It is no wonder that the statesmen, the philanthropists, and the scientific men of the world are looking with profound interest upon the solution of a problem which is unprecedented in the history of mankind.

Now let us bring to mind the actual condition of affairs in this country. Congress has conferred upon the Negro the rights and duties and responsibilities of citizenship. Churches of all denominations are spreading the gracious influences of the Christian religion. Private philanthropy gives special education. The action of every State in the Union maintains public schools. Thus we may say that, in this country, the black man is receiving or has received through the white man three great benefits—political freedom, the Christian religion, and the opportunity to acquire knowledge.

At the present time we can only consider the third of these great opportunities. As I have already said, the public school system is open to the blacks as to the whites throughout the Union. Opportunities are also provided for the exceptional cases that require professional instruction. There are also special foundations, some managed by the States and some by beneficent associations, some supported by public funds and some by private or ecclesiastical liberality, and some by partial aid from the Slater and Peabody funds. Such is the work now going forward.

Let us look toward the future. The education of a race is

a very complex subject if we think of it as a whole; but if we remember that the education of a race means the education of the individuals in that race, the problem is simplified, for we quickly perceive that the training of every person involves three elements—the formation of habits, the acquisition of skill and the performance of work. Accordingly, that institution or school is best which enforces habits of order, attention, obedience, discrimination, memory; which then secures skill in hand-craft and rede-craft, and likewise shows how these habits and this skill may be applied in useful avocations.

Careful observers are agreed that among the blacks there is at this time the special need of well-trained teachers, artisans, and tillers of the soil, and that Hampton and other Institutions engaged in kindred work should introduce, as far as possible, the methods of "the new education" which have been developed among the whites during the last half century. This "new education," as it is called, is largely the education of the hand.

During the present generation there has been a remarkable change in the instruction of whites in schools of every grade, from the Kindergarten to the University. In one form or another, hand-craft has been restored to the place from which it was long excluded by rede-craft. The change has not been accomplished without experiment, controversy, difficulty, and failure; but, at last, I think we may claim that the victory is won and that no scheme of study can be regarded as complete unless the study of books is constantly supplemented by the study of objects. The young must be taught to acquire knowledge by the observation of nature and her forces, as well as by reading the observations of others respecting nature; and the character must be developed not merely by the exercise of memory and by the interpretation of written documents, but also by the training of our youth to useful occupations.

It is hardly necessary to say that useful occupations are as varied as the ages of men and the wants of civilised society. The pen, the pencil, the needle, the knife, the retort, the lathe, the carpenter's chest, the blacksmith's forge, the microscope and the telescope, the dynamo, the steam engine—all of these, vastly as they differ from one another, are implements by which hand-craft is acquired, by which work is performed.

Experience has shown that this training may have four objects,—any one of them, or all.

1. The training of the hand, which should begin in very early life and should never be given up,—or Manual education.

2. The employment of this training in useful pursuits and occupations, especially those of fundamental value, like working in wood, metals, bricks, stone, etc.—or Industrial education.

3. The acquisition of some important art or trade, the making of artisans, builders, mechanics, skilled farmers, etc.—or Technical training.

4. The advancement of knowledge and the prosecution of research,—or Scientific training.

Do not suppose that the boundary lines between these four groups are sharp and clear; each overlaps the other. The most advanced chemist and electrician is still disciplining his hand to greater facility. The work of the surgeon, as long as he practises, is in the discipline of his hand. He is fitly called a chirurgeon, a hand-worker.

Let us now think of three callings in which many, perhaps most of the Hampton graduates, are likely to be engaged.

1. *Teachers.* It used to be thought that anybody could teach who knew a little more than the scholar. Now it is demonstrated that methods of instruction are just as important as the matter of instruction; that good teachers must know the best arts of awaking the dull, guiding the way-

ward, and developing the promising; and that they themselves should be trained in hand-craft. Women are especially fitted for this work, particularly in elementary schools. Dr. Stanley Hall, in a recent speech at South Hadley, pleads for chairs of pedagogics for women, "not only because she does most of the teaching in this world, but because the school is good almost in direct proportion as it becomes like home." Now teachers must be themselves fitted for their vocation. They must learn how to awaken in their scholars a love of exertion.

2. *Farmers.* The whites have only just waked up to the importance of training men to be farmers. In a recent notice in the *North American Review* Mr. Harwood has summed up the experience of the United States since the first Agricultural College in the United States was established in Michigan in 1857, and the first Experiment Station in Connecticut in 1875. Anyone who will look at that report, or at the papers printed by the U. S. Department of Agriculture, or at such illustrations of the work of that department as are on exhibition constantly in Washington and occasionally elsewhere (as at Chicago, Atlanta, etc.), will perceive that to be skilled in agriculture is to be skilled in one of the most interesting the most complex, the most difficult, and the most useful of all human occupations. When intelligence guides the operations of the farm, those operations, those pursuits are elevating, stimulating, and rewarding.

3. *Artisans.* Under this term may be included all who work in any branch of the mechanical arts or with any kind of instrument or machine. The progress made in industrial education, within the limits of a single generation, is marvellous. Prior to the great exhibition in Philadelphia little was known as to the methods suitable for training artisans. Scientific schools had indeed been established for advanced professional life, and, to some extent, technical institutes were provided for the training of chemists, engineers, and the like;

but, in this country at least, the training of mechanics had been very much neglected. The exhibition just referred to brought clearly before the American teachers the processes devised by Dellavos, a Russian, in 1868. The keynote to the methods that he employed was this, "Instruction before Construction." Professor Woodward of St. Louis declares that this made a revolution in industrial training. Read his article on Manual Training in the new edition of Johnson's Encyclopædia.

In a valuable report by Mr. Addis on Negro Education, lately printed (U. S. Bureau of Education) I noticed the remark: that nearly all the schools for the blacks, say, in their catalogues, that their principal object is to teach the "Dignity of Labour"; and another writer, in the *Southern Workman,* makes a similar remark. I would rather speak of the Enjoyment of Work; enjoyment which may have these elements: the acquisition of a livelihood for one's self and others, or pecuniary reward; the pleasure of exercising the powers of body with which we are endowed; and the employment of skill. In other words, there may be, there should be, in rightly directed labour, moral, physical and intellectual enjoyment.

The very history of the word "work," if you will look it up, is an epitome of the history of civilisation. From the Greeks to the Saxons, from the Saxons to the English, from the English to the Americans, from the Americans to the Africans, the word is handed down. "Work, work, work," has distinguished every progressive and prosperous race. "Sloth, sloth, sloth," has been the characteristic of decadence and imbecility. The writer, the poet, the musical composer, the artist are remembered by their "Works." The builder, the farmer, the artisan are good or bad workmen. The president of the United States, the editor of a great newspaper, the head of a large school, the owner of great factories, the leader of an army, and the navigator of a ship,

work harder, if they are successful, than the clerks, the typesetters, the assistants, the soldiers and the sailors they employ.

Those who are interested in the uplifting of the blacks, believe that, next to freedom and religion, the greatest boon that the more favoured can bestow upon the less favoured is to give them opportunities for becoming skilled "workmen." It may strike some of you with surprise when I say that work is one of the greatest privileges enjoyed by mankind. For one, I give thanks every day that I have the capacity, the opportunity and the taste for work, and I wish that every man and woman in the land could have the same satisfaction that I enjoy in the performance of daily tasks.

May I urge upon you, my hearers, a like recognition of the pleasure of work—not mere animal exertion, although that may have its pleasures, but the combination of intelligence with labour. As President Hayes said: "Add to labour intelligence and to scholarship handicraft." Or, as Booker T. Washington said in his Fifteenth Report: "Right here comes the value of industrial education combined with first-class literary training; it has a modifying, sobering influence, resulting in teaching the coloured youth that the road to the highest permanent success and development is by slow gradations, and nature permits of no reversal of the process."

It is idle to suppose that the evils of poverty, of ignorance, or of misfortune can be removed by simple acts of legislation. Good government can do much to protect the society over which it rules; but it can never affect the operation of the natural law that work brings prosperity and sloth brings misery. We all do well to remember what President Cleveland said at Princeton: "When the attempt is made to delude the people into the belief that their suffrage can change the operation of natural laws, I would have our universities and colleges proclaim that those laws are inexorable and far removed from political control."

My appeal, then, to the pupils of Hampton is this: wherever your lot may be cast, in the city or in the town, in the schoolroom or the shop, on the farm or on the railroad, be exemplars of skilled labour, and never listen to those who would lead you to think that you can rise by any other process than the exercise of your own free will and the exertion of your own intelligence. The same laws govern the whites and the blacks; human nature is the same everywhere, and the sooner everybody discovers that the conditions of success in life are dependent upon toil, intellectual or physical, or both combined, the better it will be for the entire community.

Here are the words of a distinguished economist of England, addressed to his own countrymen, and all the more impressive to us because the lesson was not called out by any desire to deal with questions which divide and concern us:

"The growth of society has been distorted by partial and injurious laws, and the distortion will not be removed by the removal of the causes which induced it. You cannot as the adventurer in the Greek comedy does, take the nation, and, by some magic bath, restore it from decrepitude, disease, vice, dirt, drunkenness, and ignorance, to manliness, health, virtue, self-respect, sobriety, knowledge, forethought, and wisdom, at a stroke. It will need long years of patient and disappointing labour before the marks imprinted by centuries of misrule and wrong-doing are effaced. And furthermore, the renewal, if it is to come, cannot be imposed from without. It must be developed from within. Beyond the removal of positive mischief, which it has in past times created, the legislature can do little more than give every freedom it can for innocent energy, and check all the mischief, as far as is possible, which comes from the strong domineering over the weak. If it does too much, it enfeebles enterprise and discourages practical wisdom. If it neglects to adequately protect the weak, and thereby gives license to selfishness and

fraud, it permits a trouble for which it has assuredly to find a remedy."

In concluding these remarks, let me express a belief that the distinction between the two races is as permanent as the distinction between the colours white and black; that this distinction is natural and cannot be set aside by human action; that the lessons of history make it clear that differences of race are ineffaceable, by legislation or volition. They are doubtless implanted in us for some purpose which our limited intelligence is unable to descry. It is of no consequence whether we "like to think so" or not. The stars move in their orbits without regard to mortal wishes. Whites or Blacks, it is our duty to recognise what is true; to make each race as good as it can be made; to discover and develop such qualities as tend to its improvement; to eradicate those which are degrading; to help the people that are downcast, by giving them the uplifting influences of freedom, religion and education; and especially to teach them the uses of skilled labour; and then—it is our duty to leave the outcome to Providence—never forgetting and never hiding the fact and never fearing to say, that deeper than all distinctions of race, is the basis of human nature; lower down than all the idiosyncracies by which human nature is differentiated we find the Brotherhood of man and the Fatherhood of God.

In a Northern University, looking westward over Cayuga Lake, stands a granite bench, the gift of Goldwin Smith, on which he has engraved the words, "Above all nations is Humanity." Here, facing southward, on the portal of one of these halls I would inscribe, "Beneath all race distinctions is the Brotherhood of man; above all men is the Fatherhood of God."

[redacted]

CIVIL SERVICE REFORM

Among various addresses which I have delivered with respect to the promotion of Civil Service Reform, I have selected that which was given as President of the Civil Service Reform League, at Washington, in 1904.

XX

CIVIL SERVICE REFORM

It is among the privileges of the veterans (an evergrowing body to which, if you live long enough, you will all belong), to indulge in reminiscences. Younger men must be active in the field; older men may study the principles of stategy and try to indicate the essentials of success. As civil service reformers, young and old, perhaps both old and young, we belong to an army so vast and complex, having such a variety of weapons, sometimes defensive and oftener offensive (undoubtedly offensive, if not intentionally so), that no one in the fighting ranks can estimate the operations of each corps.

It is not amiss, therefore, for those who are out of active service, to place themselves in the rear, gather in the reports, sum up the gains or the losses, and consider the results already obtained, for the use of more serviceable combatants.

Leaving, then, to other speakers the specific topics which require immediate and deliberate discussion, I shall present some desultory reflections of an observer upon the progress of civil government, and upon efforts made by reformers of other days to promote the welfare and progress of society. These reflections must be brief and of course inadequate,—merely suggestive, it is true,—but possibly they may germinate, and lead, in the near hereafter, to ampler and abler presentations of the theme. But for the sake of those who have not been present at former meetings of the League, I must begin with some facts of recent history.

Geographers of the school of Ritter and Guyot have taught us that to understand the earth as a whole we must know

something of the pleasant places where our lines have fallen; and a current witticism, attributed to a Cantabrigian, declares that "to be truly cosmopolitan, a man must know something of his own country." Acting in accordance with this principle, before we look beyond, let us consider the recent history and the actual condition of civil service reform in this country, with a hope that although a brief epitome will sound trite to the silver greys in this assembly, it may be fresh to the new recruits. At any rate here it is.

The evils of the spoils system, unknown in the earlier days of this Republic, multiplied with the fecundity of bacteria, from the days of Andrew Jackson to those of reconstruction under Andrew Johnson. The Bacillus Tennesseeensis did much harm to the body politic. Consequently in 1868 the need of reform became so apparent that it was brought into practical politics by the memorable activity of a Representative of Rhode Island, Hon. Thomas L. Jenckes. Several years later, Dorman B. Eaton produced his book upon English "abuses and reforms," a book which remains to this day a vade-mecum of the veterans, and may be commended, as a pilot's own book, to all young navigators in the sea of politics. In 1883, the Pendleton bill, establishing the National Civil Service Commission, became a law by the signature of President Arthur. The way had been prepared for this enactment by the administration of President Hayes, in whose cabinet sat an untiring advocate of reform, our former President, our constant support, our wise counsellor, Hon. Carl Schurz. One of these days the world will know (what we can now surmise), how much was due to his patient wisdom as a Secretary and a Senator.

Since the National Civil Service Commission was organised under Dorman B. Eaton, we have passed the twenty-first mile stone. This is an era from which to date. At our last annual meeting a paper from Mr. Foulke, supplemented

by one from Commissioner Greene, reviewed the progress of this period, so that all that is now essential is to give the latest summary prepared for us in the office of the Commissioners. By the kindness of Commissioner Greene, I present these figures, not yet published, which will appear in the twenty-first report of the Commissioners. It is a remarkable record, worthy of careful attention and of tenacious remembrance. On June 30, last, the whole number of positions in the executive civil service was nearly 300,000, of which more than one-half were competitive. The exact enumeration is as follows: the whole number of positions in the executive civil service was 290,858, of which 154,093 were competitive, 80,798 were excepted, 49,254 unclassified, and 6,203 Presidential.

During the past year 133,069 persons were examined, 103,718 passed and 50,830 were appointed. As compared with the previous year, it is an increase of 20,011 in the number examined, 15,582 in the number that passed and 10,407 in the number appointed. From the same communication I gather these additional particulars. There has been a reduction of 11 per cent. in the number of temporary appointments without examination in the service at Washington, as compared with the appointments of those standing highest upon examination. There has probably also been a reduction of about 3 per cent. in the number of temporary appointments outside of Washington.

On November 15, 1904, the President adopted improved labour regulations for the service at Washington. An increasing observance has been shown of the prohibition of the assignment of unclassified labourers to classified work.

During the year there has been very marked progress in the observance not merely of the letter, but of the spirit of the act and rules, and noticeable absence of complaints in political activity and assessments.

In view of all this expansion of the merit system it has

been a great satisfaction to read in both political platforms commendation of the principles of civil service reform.

Gratifying beyond measure has been the recognition of civil service principles, and the introduction of the merit system to the Philippines. From these examples of good administration in our dependencies, the stay-at-home observers in the United States may derive instruction and encouragement.

May I not be accused of undue partisanship if I remind you that the President of the United States, just elected by an overwhelming vote, was once a member of the National Civil Service Commission. His writings are on record, services in New York and Washington in behalf of the cause are well remembered, and his official actions, since he entered upon his exalted station, assure the League that he is still a most efficient promoter of those measures of which for so long a time he has been a distinguished and efficient advocate. I have no authority to speak for him, but I am confident that he will be satisfied (as we may be also), if he is judged by what he does as well as by what he says.

Before I pass on from this review, let us bring to mind the fact that the progress of the last ten years is largely due to that admirable man, Hon. John R. Proctor, Civil Service Commissioner under the administrations of Cleveland, McKinley and Roosevelt. He was for many years a geologist, and by the truth-seeking methods developed in his career as a scientific man, he became a master of all known facts respecting the condition of our civil service, and a recognised authority with respect to past experience and future requirements. Those who heard his voice at the last meeting of the League in Baltimore, alas, so soon followed by his sudden death, have a vivid memory of his strong personality, his calm and judicial speech and his abiding faith in the merit system. All his colleagues bear testimony to his official fidelity, his skilful persuasiveness, his appreciation of ob-

stacles and opportunities, and his devotion to the country's good. He was truly a statesman. What better can we say of him than to apply to him the familiar words of Wordsworth, portraying the Happy Warrior? Among those members of the Commission who have "gone over to the majority," three will always have especial honour,—George William Curtis, Dorman B. Eaton and John R. Proctor.

From modern instances let us now recur to some early reformers, and discover, if we can, the lessons suggested by their examples or derived from their speeches. A great deal may be learned from historical research. For example, much wisdom may be found in the utterances of the ancient prophets of Israel, but I will not quote that which ought to be familiar.

The first aphorism that I bring forward is that the advocate of righteousness in politics must never expect immediate approbation. Let him rather look for obloquy and think himself fortunate if he does not receive of it good measure, pressed down and running over. For his instruction let him read Plutarch's story of one whom I venture to call one of the earliest civil service reformers, Aristides the Just, ostracised from Athens twenty-four hundred years ago. Every schoolboy used to know why. A citizen, when asked why he wished the name of Aristides to be written on the voter's sherd, replied, "Because I am tired of hearing him everywhere called the Just."[1] But Aristides, though his fame may have bored his contemporaries, was recalled three years after his exile and placed in stations of service and honour.

Another example is that of Savonarola, who merited the name of "the Saviour of Florence" (given to him by a contemporary and repeated by his most recent biographer) may receive the honour, as saints are sometimes canonised

[1] Aristides, at the request of an illiterate voter, voted against himself.

long after their death, of being designated as one of the most famous promoters in the time of the Italian republics, of civil and municipal reform. He it was who overthrew "the rule of the ring" in Florence and incited the people to vindicate their rights. Never in modern times, not even when Tilden and his co-workers overthrew the boss of New York, have there been such civic upheavals in behalf of good government. In the elaborate and scholarly memoir of this renowned reformer, by an author of the highest authority, Professor Villari, there are many instructive passages in respect to the evils then endured by the municipality and the struggles which were made to overcome these civic iniquities. I will read two brief passages which show the influence of one man devoted, regardless of personal consequences, to municipal reform. These are the words of Villari, quite suggestive to reformers of the twentieth century:

"Savonarola did not invent any of the institutions he persuaded Florence to adopt, and this really constituted his chief merit. Institutions are neither created nor conceived; they come into existence as the result of the times and conditions of the people. He rediscovered them, as it were; and recognising their value, succeeded in persuading the nation to adopt them; and what higher meed of praise can be given to his political sagacity? We repeat that Savonarola was more clear sighted than the other man, simply because his eyes were sharpened by natural good sense and earnest benevolence, and his mind was unperplexed by theories, his heart undisturbed by party spirit. He therefore deserves to be ranked among the greatest founders of republican states."

"Again," says Villari, ". . . we are almost tempted to believe that a miracle has been wrought in Florence, when a Friar, totally unversed in worldly matters, could succeed in confounding the wise, redeeming his country, and establishing a new Republic. But, on the other hand, this seemed to confirm the old experience, that in great social

emergencies one force alone is powerful to save, the pure and unselfish moral force of really great men, namely: fervid earnestness for truth, firm and steadfast aspirations after goodness. In Savonarola all these elements were combined and formed, indeed, this very essence of his noble character. In moments of trial what learning could compare with wisdom such as this? what prudence boast the victories and conquests such devotion could achieve?"

For your encouragement, fellow reformers, let me add that this highly gifted man endured the most obnoxious treatment and was burned at the stake, yet his statue in bronze now stands in Florence on the site of his scaffold, and his name is honoured throughout Europe as one of the promoters of human liberty.

Long before Savonarola, there lived another illustrious Italian, Dante Alighieri, so famous in the world of letters that his fame as a statesman is sometimes overlooked. Dante was a civil service reformer who devoted his early years to the public service. By joining one of the guilds, an act then prerequisite to the holding of a public office, he became, a little later, a commissioner of public works and superintended the widening and improvement of certain streets in Florence. I can believe that Mr. Lowell or Mr. Gilder would have gladly rendered kindred services in Boston or New York, if there had been any possibility of their selection, while I admit that, as a general rule, the measures of well-trained engineers are more desirable than the metres of the most accomplished versifiers.

The second aphorism is this, that lofty ideals must be upheld. Those who are called upon to frame laws or pass them must study, in the light of experience, the art of government as did the founders of this republic who, with limited apparatus, without such libraries as we possess, ferreted out the records of ancient states. "The Spirit of the Laws" by Montesquieu was a favourite book with them, and

the student of politics might do worse than to recur to his pages even now, though Thirlwall and Grote, and Mommsen and Sismondi stand on the library shelf and the "Federalist" is in the student's hands. But historians are not the only teachers. The publicists, Bluntschli, Lieber, Gladstone, Tocqueville and Bryce have their lessons for us. Emphatically let me say that the idealist must be consulted,—those seers whose lofty conceptions of what mankind should strive after, began with the earliest of Grecians and were continued by Plato and Aristotle and a long line of bright men, down to the authors of the "Utopia," "Oceana," "Telemaque" and the "Persian Letters." The practical politician is prone to think that he has no use for the idealist, but if he will turn to the pages of Sir George Cornewall Lewis, he will find in a compact form a defence of idealism in politics which has its parallel in Sylvester's assertion of the value of imagination in science, especially in mathematical science. If we consider all the great items of political progress, says this far-sighted statesman, such as the introduction of monogamy, of the abolition of slavery, of the liberty of the press, of religious toleration, of permanent embassies, of a standing army, of a government post office or of a civil police, we shall find that every one of these measures must, when it was newly introduced, have been conceived of by its author as an ideal scheme.

The third aphorism is this. While it is important to be aggressive, it is imperative to be patient. The public at large are slow to follow the leadership of the most wise and most thoughtful members of the community. No statistics enable us to speak with mathematical precision, but it is safe to estimate that it takes a period of from thirty to fifty years, let us say the time of one generation, to secure the popular approval of matters of minor importance, while to establish greater principles a longer period is usually involved. It is encouraging to know that good ideas have extraordinary

vitality; they may slumber for decades or centuries, but once embodied in laws and institutions they are, like the bread cast upon the waters, found after many days. Perseverance in a good cause is just as important as those alluring qualities, combativeness and suggestiveness.

Anyone who has followed the discussions of this League in this and former years, must be aware that the members do not consider that their task is done. Encouraged by the progress that has been made, enlightened by the efforts which have led to victory, they look for early and great improvements in many directions, for example, in the consular system and in the subordinate posts of the diplomatic service. They are striving for improvement in municipal government. They seek to persuade the public that no appointment should be made in educational or philanthropic establishments except on the grounds of fitness, training and experience. The task of reformers will never be done, so long as human nature is what it is,—but society will ever be advancing toward the perfection which seems beyond its reach.

Among the many eminent foreigners who have been among us during the St. Louis Exposition and during the Presidential campaign, there are three whose reflections are awaited eagerly. I refer to the Archbishop of Canterbury, a student of ecclesiastical and religious conditions, to the biographer of Gladstone and to the author of "The American Commonwealth," observers of political and social affairs. One of them, Mr. Morley, in his speech at Pittsburg, has given us an indication of what we may expect from him. After speaking of "the question of questions," whether moral forces keep pace with material forces in the world of which this continent, conspicuous before all others, bears such astounding evidence, he says there is many a sign of progress beyond mistake. "The practice of associated action, one of the many keys of progress, is a new force in a hundred fields, and with immeasurable diversity of forms. There is less acquiescence

in triumphant wrong. Toleration in religion has been called the best fruit of the last four centuries, and in spite of the few bigoted survivals, even in our United Kingdom, and some savage outbreaks of hatred, half religious, half racial, on the Continent of Europe, this glorious gain of time may now be taken as secured. Perhaps of all the contributions of America to human civilisation this is the greatest. The reign of force is not yet over, and at intervals it has its triumphant hours, but reason, justice, humanity fight with success their long and steady battle for a wider sway."

Surely, with these encouraging reflections, we may press forward in the work upon which we are engaged.



SPECIAL TRAINING FOR SPECIAL WORK IN PHILANTHROPY



SPECIAL TRAINING FOR SPECIAL WORK

In the winter of 1904, John S. Kennedy, Esq., of New York, gave a large fund to the Charity Organisation Society of New York in order to promote and develop the idea of instruction in Philanthropy. At the Annual Meeting of that Society, held on January 17, 1905, the following address was delivered.

XXI

SPECIAL TRAINING FOR PHILANTHROPIC WORK

THE occasion which has brought us together is fine, fine among all the religious and philanthropic reunions of this metropolis, fine like gold among the useful and precious metals. Added to the ordinary themes of such an anniversary, we have to-day the freshness of a new problem, namely, the potentialities of systematic training in the conduct of charities, or as the cards of invitation have expressed it, "special training for social work." John Ruskin once said in his poetical prose, "Charity is wound with white roses which burst as they open into flames of fire," and I choose to suppose that he meant, in ordinary parlance, "Simple deeds of charity often develop with unexpected brilliancy." An unexpected and munificent act now claims our attention, one which has burst like "a flame of fire" upon the unobtrusive work of friendly visitors among the poor, not only in Manhattan, but in other places where the seeds of systematic charity are planted. A large-minded and large-hearted man, John S. Kennedy, who provided not long ago a building for four co-operative charities, has given a fund to maintain the agencies by which workers in various departments of humanitarian effort may be prepared for their duties, by guidance, instruction, and inspiration. In distant places as well as in this city his bounty has been recognised as wise, timely and far-sighted, freighted with great possibilities, laden with great expectations. It has been received with the heartiest gratitude.

The circumstances of this gift are well known. For several years a summer school in charitable work has been

maintained in this city under the skilful superintendence of Dr. Philip W. Ayres. From this nucleus the New York School of Philanthropy is now developed, thanks in a great degree to Mr. Kennedy, and to the president of this society, Robert W. de Forest. A large staff of instructors is enlisted, under whom a goodly company of students are enrolled for the scholastic year, and many more are coming in the summer. Get the "Hand Book of the School of Philanthropy" and be surprised, as I have been, by the variety of courses already offered, their adaptation to the present wants of the country, and the number of experts engaged as leaders and guides, under the direction of Dr. Devine, Mr. Johnson and Mrs. Spencer.

Other antecedents should be brought to mind, imprimis the excellent and suggestive initiative of Frank B. Sanborn at Cornell University, in the administration of President White. The informal classes in the Johns Hopkins University, fathered by Herbert B. Adams, and quickened by the enthusiasm of that rarely gifted man, the late John Glenn, should not be forgotten, for they had not a little influence upon such remarkably influential characters as Amos G. Warner, John H. Finlay, Albert Shaw, E. R. L. Gould, Jeffrey R. Brackett, John M. Glenn, P. W. Ayres, Miss Richmond and Mrs. Glenn. The classes in Hartford, Connecticut, and the highly organised work in the University of Chicago under Professor Henderson are memorable. Among the most important of all such agencies is the Training School for Social Workers under the auspices of Harvard University and Simmons College. To Boston, the shining focus of charity and knowledge, Dr. Brackett, one of the wisest of American experts in the domain of charitable relief, has been called away from three important stations which he held in Baltimore, and is now inaugurating organised instruction in the various branches of charitable effort. Now New York comes to the front, larger, richer, more venturesome

than any other city. The building was here, the leaders, the scholars, the ideas, the organisation. "Wanting was what?" Endowment! So endowment enters the field, bearing a letter which is a sort of charter, a bill, not of rights, but of duties, a summary of principles. If you have not read it, get a copy and be instructed by Mr. Kennedy's conception of the School of Philanthropy. Observe three points in his letter:

1. His gift is not an impulse, nor an answer to an appeal, but is the fruit of scrutiny—scrutiny of the work performed in New York during the last seven years.

2. Remark the emphasis laid by this benefactor upon the spirit of co-operation with the educational and philanthropic institutions of this city, already fostered by the incorporation of the United Charities.

3. Read and remember this dictum. Mr. Kennedy says:

> There is the same need for knowledge and experience in relieving the complex disabilities of poverty that there is in relieving mere ailments of the body, and the same process of evolution that has brought into our hospital service the trained physician and the trained nurse, increasingly calls for the trained charity worker.

This one sentence comprises a volume. It might serve as a motto, to be repeated over and over again.

Two pithy sayings of Ralph Waldo Emerson have occurred to me as this gift has been considered. One of them is this: "A new degree of intellectual power seems cheap at any price," and the other is this: "Nothing great was ever achieved without enthusiasm." With enthusiasm, therefore, we are to consider the potentiality of training in the field of philanthropy, and the attainment of a new degree of intellectual power.

One word of caution to the outside world. Hands off! Let not these schools of philanthropy be multiplied too rapidly. Those now established are quite enough for im-

mediate wants, certainly in the Atlantic States. Let them be built up before rival or imitative beginnings are made elsewhere; let the fruitage come before cuttings are planted.

If there are any in this assemblage sceptical in respect to the objects of this foundation, let me ask them to bear in mind some general principles.

Modern society makes much use of three factors, indeed, all progress depends upon them. These are they: Co-operation, investigation and education. Do you shun the words that end in -tion? Then take these: Union, knowledge and training—and consider what they involve.

Begin with Union. By a few examples be reminded of this idea, that combination is the note of our times. In the political world you may bring to mind the opposition to disunion in the United States of America, and in the United Kingdom of Great Britain and Ireland; you may recall the union of Austria and Hungary; the resurgence of new Italy; and the restitution of the German Empire. Efforts for reunion among the Christian churches are widely supported. See how Greater New York has been constituted. Notice the organisations of capital and labour. Tell me, is not association the watchword of the twentieth century? Among objects near at hand, the fruits of seeds planted long ago, may we not look for the early ripening of religious brotherhood, united charities, and international justice? Webster's ringing phrase comprehends it all, "Liberty and Union, one and inseparable, now and forever."

Next consider Knowledge. I use this word, and not science (though they mean pretty much the same), because for some reason science has not been a popular word. It has suggested to the non-scientific mind abstract mathematics, astronomical tables, lists of fishes, insects, birds, beasts and plants, the artificial nomenclature of minerals and rocks and the still more unpronounceable terminology of modern chemistry. Applied to charity, science has seemed abstract,

impractical, cold, and distant, far removed from sentiment and affection, and even from humanity and good will. But when science is seen to be the summary of man's observation and experience no thoughtful person can question its value. "What has been found out?" or "What do we know?" or "What are the facts?" are the queries with which researches should begin. Knowledge is the starting point of all good actions. Accurate information was sought by the ancient Babylonians and the golden rule was recognised in remote antiquity, but the notion that Science and Philanthropy could be wedded and made co-operative is a modern thought. Even now, there are many charitable and intelligent persons who do not comprehend what this union signifies. They prefer to be governed by impulse rather than by principles; sentiment, not wisdom. Yet the number is constantly increasing throughout all civilised lands of those who would discover, if possible, wise methods of prevention and remedy. These are they who would infuse sympathy with knowledge; who would ascertain facts as the basis for appropriate action. These are they who recognise such a field of inquiry as social pathology, the ascertainment of the nature and causes of social disorders and decay, so that relief appropriate to individual cases may be discovered and applied. What sort of a doctor would he be who trusted to sentiment and not to knowledge and skill? He would be a hoodoo.

Remedies have already been discovered for many evils; modes of prevention have been ascertained; the means of applying this knowledge to individuals, and to communities, have been sought out, and there is abundant inquiry in progress as to the treatment of the social cancers and innumerable ills which prey upon humanity. Legislation has come to the service of philanthropy. In fact, philanthropy appears to be going through the experiences of other sciences. Recount the advance of medicine—kind impulses, obvious re-

lief, traditional experience, accurate records, comparison of treatment, accepted principles, systematic investigation, the abolition of certain diseases, the control of others, the lessening of minor ailments, the prolongation of life, and often, Euthanasia.

Likewise charity begins with pity and sympathy, leads on to "oil and wine," proceeds to discover the causes of distress, investigates cases, applies permanent relief, and, by judicious help, counsel and restrictions, restores the individual to health, moral as well as physical, while it enables society to frame such laws and apply such methods as will reduce, if not abolish, many evil tendencies and correct many evils.

I come in the third place to the subject of Training. Modern society is so complex that in every pursuit some degree of preparation is requisite, and this preparation must not only be general, based upon a broad acquaintance with the subject in hand; it must be adapted, as near as may be, to particular callings. Recurring again to the medical parallel of our charter, remember that in colonial days, the same man had the cure of souls and the cure of bodies, like the famous Jared Eliot of Connecticut. By and by, preaching and practice were separated. Then the good physician was an all-around man, willing to amputate a leg or dispense the medicament of Paracelsus, *elixir proprietatis*. Specialisation at length separated surgery from medicine. Presently all branches of surgery were too much for one man, and the oculist, the aurist, the gynecologist, received special training. Medicine called for consultants as well as practitioners. Again, the distinction was made between the physician on the one hand who is devoted only to science, the anatomist, the physiologist, and the pathologist, and on the other the physician who is in constant attendance upon the sick. Nursing after Florence Nightingale became a most important cult. Different kinds of nurses are now called for. All this il-

lustrates the doctrine that following special aptitudes, special training for special callings is the demand of modern society. Only be it remembered special training should always be based upon education as broad and solid as the circumstances of the individual can secure.

Apply these illustrations to philanthropic work. Evidently there are two classes of workers to be trained—those who can give all their time to the public good, and those who exercise charity incidentally, but not exclusively. Some of those who devote themselves to the dispensation of charity as a career may rise to stations of importance, may be overseers of the poor, secretaries of charity societies, superintendents of refuges and asylums, students and writers, perhaps teachers and lecturers. Others will be contented with the equally honourable but less conspicuous work of friendly visitors among the poor and needy, or perchance, municipal or State advisers and trustees of beneficent institutions.

A private letter sums up the situation with such felicity that I will ask leave to read it. After visiting certain classes in the Boston school of philanthropy, my friend [1] writes thus:

> I saw there a fine lot of bright young men and women eager to learn. Some were looking to being paid workers, others to being volunteers. I felt that the greatest value of the school was in the spirit it inspired. Its object is to teach people to be good citizens, to work for the benefit of the community. The object of everything taught is the helping of others. The students are not studying in order to benefit themselves. And they are being trained to work in social matters with care and thought. If any choose not to follow in the special lines treated at the school, the point of view gained will be most helpful to them and to the community in whatever direction their energy is directed. So we may hope that the influence of these schools will radiate far beyond the limited field of charities, correction, settlements, and the like.

[1] John M. Glenn.

Another element in the training of prime value is that it gives the student a general but clear view of the whole field before taking up any special line of work. So when he approaches a family in distress he is prepared to look for all the weak spots and to prescribe proper remedies of various kinds, material, moral and spiritual, to cure various and varying needs.

I mention these points because they have not, apparently, had much stress laid on them.

During the nineteenth century, what is called higher education as distinguished from elementary has in this country at least, in accordance with the principles of evolution, developed from the simple to the complex. It was not until the nineteenth century began that there were among us any schools of medicine, law and theology. About the middle of the century technological and scientific schools were established. These were soon subdivided, and courses for chemists, architects, engineers, miners were provided. A little later came training for biologists, physicists, psychologists, historians, economists. Simultaneously schools have been established for many varieties of manual industry. Recently came schools for nurses. The youngest child of Education is now in his cradle, and is christened Philanthropy. What will this child be and do when he reaches maturity? The question cannot be answered. Yet human experience shows that good ideas never die; they expand. They may be dormant like grains of wheat enwrapped in mummy cloths, or hidden, like bread cast upon the overflow of the Nile—but the vitality continues. However, some predictions may be hazarded.

A large number of students will be enrolled as soon as the opportunities and advantages are understood. This goes without saying. Probably very few to begin with will follow one prescribed course. The attendants are likely to have special needs and the administration will endeavour to satisfy the wants of individuals, rather than to form a few classes following a curriculum. There will certainly be many

lectures addressed to audiences as large as this room will contain.

This school will enlarge its special library of books that embody the experience of mankind in all departments of social activity. It will include the manuals of active organisations, reports, statistics, addresses. There will be histories of municipalities and states. Walpole's "History of England" will be bought for the one chapter on the results of English reform. There will be biographies of the immortals, illustrious benefactors of society, martyrs and saints of the ancient world, reformers and enthusiasts of the Middle Ages. St. Vincent de Paul and Francke of Halle will stand side by side with more recent leaders in philanthropy from John Howard to Lord Shaftesbury, from Count Rumford to Montefiore. The works of moralists and promoters of ethical culture, like Maurice, Davies, Lyman Abbott, Westcott, Tucker and Hodges, will be in the library. Economists and statisticians will not be omitted. The studies of the liquor problem by the Committee of Fifty, reports on crime and punishment, from Francis Lieber to Charlton T. Lewis, the year books of Josiah Strong and Robert Hunter's study of millions of the poverty-stricken are sure to be remembered. Philosophers will be represented from the ancient Greeks to Herbert Spencer; and historians, like John T. Merz, who has recently written a remarkable book on "European Thought in the Nineteenth Century." There will be a shelf of choice books, bound with gilt edges, works of the idealists, those torch bearers who peer into the darkness and awaken our imaginations, followers of Plato and our own contemporaries. A catalogue *raisonnée,* something more than lists, something less than reviews, should be prepared for ready reference. It would have a wide circulation beyond the library room.

Not long ago I asked the librarian of one hundred thousand books, how many of them were on the subject of phil-

anthropy. Possibly fifty, was his reply. Five thousand should have been the number. Ten thousand should be collected for this new school.

With such nitrogenous stimulus, we shall, perhaps, ere long have a series of new and timely publications. Our excellent journal *Charities,* interesting and indispensable, will henceforth be more valuable than ever. It will be a record of progress at home and abroad. If Americans have made no such study as that of Charles Booth in London, we have many capital contributions, made by our colleagues and associates, to this branch of literature. The " Gesta Christi " of Charles L. Brace is one such book; the memoir of Dr. S. G. Howe another. Remember the prison studies of Dr. Wines. Indispensable are the social statistics of the census, the encyclopædias of Lalor and of Henderson. The writings of Miss Richmond, Mrs. Glenn, Dr. Devine are not likely to be forgotten. You must allow me, Mr. President, to name your masterly presentation of the tenement-house problem as a most important contribution to the welfare of large cities. No wonder that Yale, your *alma mater,* gave you its highest honours when that great work appeared.

Nevertheless, books will not be the chief instructors in this School of Philanthropy. As the students of physical science and natural history learn from observation and experiment, our students must be taught by kindred agencies. I need hardly remind this audience that New York is redundant with object lessons. It is both a museum and a laboratory. The most varied and complex conditions of society are here rooted. All the nations of the world have entered their exiles, with their peculiar virtues and their peculiar habits and faults. Every form of decadence, irreligion, vice, disorder, crime, shiftiness, insanitation may be discovered. Captains of intemperance and immorality are leading regiments through sensuality, penury and sloth to the almshouse, the hospital, and the gaol.

Thank God, that is but half the story. Here also the ranks are full of wise, generous, ingenious, self-sacrificing and devoted men and women, who are thwarting the downward tendencies, uplifting the fallen, recovering the dissolute, relieving the distressed, bringing back wanderers to the paths of thrift and virtue, or, to sum it up in the Master's words, "Restoring sight to the blind."

Here to-day schools, night schools, sewing schools, manual labour schools, Carnegie libraries, reading-rooms, popular lectures, cathedrals, churches, temples, gospel missions, are multiplied on a most liberal scale, adapted to all ages, needs, creeds and tongues. These we may call prophylactic agencies, corrective of bad tendencies, bad habits and bad tastes. Moreover, there are in active operation all forms of relief, civic, churchly, associated, individual, fraternal, racial, national. Neighbourhood settlements are numerous. The children, the aged, the sick, the injured, the deficients, the crippled, all have their benefactors. Reformatory, penitential and disciplinary establishments are manifold, nor should we forget that the higher institutions of learning have able professors and lecturers who are bringing the experience of past ages and of distant lands to the service of this place and these days. Wise methods and bad methods are exemplified. Blunders, mistakes, limitations, extravagances, inexperiences may be pointed out,—and still easier is it to show examples of economical, judicious and highly successful administration. The best modes of securing assistance from those who can give money, and from those who can give time, may be studied. By lessons based on such observations, these scholars may be taught.

Yet all these acquisitions will be dry and fruitless, unless with observation and experience inspiration is enlisted as another teacher. Fortunate will those be who become inspired by that great body of philanthropists now at work among the unfortunate and the lowly. The long calendar

of those who have been canonised in Rome may be matched by a calendar of brothers and sisters now vigilant and helpful in the boroughs of New York. They may or may not be marked by their garb, but day after day, we meet, often without recognition, the Hebrew, Catholic and Protestant Sisters of Charity and the Brothers of Misericordia.

This review reminds me of a great ecclesiastical pageant which I witnessed under the dome of St. Peter's in Rome, not long ago. Two saints were canonised, both of them examples of the modern well-deserved recognition of charity and of training. Santa Rita was a good woman who lived in a country town several centuries ago, and performed the very duties which belong in our modern phraseology, to the friendly visitors among the poor; and the other was Jean Baptist La Salle, founder of the Christian Brothers, wise advocate of the importance of training in the field of education.

Obviously, a school of philanthropy has its obligations far beyond the library and classroom. It must teach the public. This may be by public meetings, addresses, tracts, conferences, social gatherings, conversations,—all the manifold agencies by which public opinion is formed. May I be allowed to speak of Baltimore? One of the greatest conflagrations in our history occurred not quite a year ago. How did the community act in this hour of trial, this extreme test? No cry of want, no disorder, no looting. The Legislature appropriated $250,000 for the needy. What happened? By our United Charities all wants were supplied, and less than $25,000 was drawn for relief from the public chest. Wise, well-taught and thrifty Baltimore,—thanks, no doubt, in a large degree, to the discussion of the principles of relief which for twenty years have been inculcated by the school of John Glenn.

One word more in conclusion, partly in repetition. The term, a school of philanthropy, is not always understood.

It is novel. It suggests nothing concrete. It sounds visionary, impractical, needless. I have heard from wise and generous persons remarks like these: "Teach philanthropy? Not much. Philanthropy proceeds from the heart, not from the head. Good will to men is a religious duty, not an academic dogma." To these objections we may make this reply. It is true that active philanthropy must proceed from an impulse, a desire, a purpose, and a principle to help the forlorn and the unfortunate. Without this motive study is in vain. Though I give all my goods to feed the poor, and have not charity, it profiteth me nothing. Likewise, one might have all the knowledge that mankind has gathered up respecting pauperism, crime, misery and every form of degradation, and, in fact, be a walking encyclopædia of philanthropy, yet without charity, he would be ineffective; he might be worthless or worse as a visitor to the poor. Upon this point we are all agreed. It is not open for discussion.

George Peabody was not trained in any school of philanthropy, but he had a good adviser in Robert C. Winthrop and an object lesson in the slums of London. John Howard was not taught in any school of philanthropy, but how much more successful he would have been if he had known the methods of modern prison reform. Florence Nightingale was a splendid, self-impelling force, devoted to the service of the sick, but she would be the first to admit that the experience of our Sanitary Commission, of the Red Cross, and of our schools for nurses, would have been to her of priceless value.

These are indeed exceptional examples, and it is not for such extraordinary characters that this school is projected. Nor is it planned with reference to that large and increasing number of wealthy men and women who are ready to contribute to the support of charitable institutions—though even they may learn much from the records of this institution

concerning the merits and the demerits of establishments which appeal for support.

The principal purpose of the School of Philanthropy is to give counsel at the beginning of their career to those who will seek it in respect to the conduct and administration of charitable institutions; and to impress the true principles of benevolence and beneficence upon that numerous company of young women and young men who are ready, in the most unselfish way, to do good as they have opportunity while engaged in other pursuits or involved in other duties. Benevolence and Beneficence are a couple that should never be divorced.

Our claim is this—the experiences of the charitable world must be accumulated, recorded, digested, and applied. Those who are willing to give their time or their leisure to the help and uplifting of the needy should be guided by the experience of other workers or their best endeavours may be thwarted. To both classes, those who will make charity a vocation, and those who will make it an avocation, this school will be of inestimable value.

Ladies and gentlemen, let me congratulate you upon the opportunities before you. I bid you Godspeed in the service of humanity, the relief of distress, the prevention of poverty, the organisation of charity, and the promotion of social welfare.

COLONEL JOHN EAGER HOWARD

The Hero of Cowpens, One of the Worthies of Baltimore

The following address was delivered in Baltimore on the 16th of January, 1904. It was prepared with reference to its delivery in the open air, but was actually given, on account of the weather, in the neighbouring hall of the Peabody Institute.

The occasion was the unveiling of an equestrian statue of Colonel Howard, erected by the contributions of members of the Municipal Art Society of Baltimore. A commemorative notice of the artist, M. Fremiet, was delivered on the same occasion by Mr. Julian Leroy White.

Howard died October 12, 1827.

XXII

COLONEL JOHN EAGER HOWARD: A MEMORIAL ADDRESS

THE simple ceremony in which we are about to engage brings us by a designed coincidence to the base of a monument which suggests, by its dignity and repose, the eminent character that it commemorates. For more than a hundred years the name of Washington has been honoured with unquestioned praise wherever our flag has gone,—and never in words more fit than those of Richard Henry Lee which every generation should repeat with gratitude, "First in war, First in peace, and First in the hearts of his countrymen."

We are not so presumptuous as to think that any act of ours can add lustre to his name, nor to suppose that the art of sculpture, however successful it may be, can enhance the beauty of that column, "simple, erect, austere, sublime," near which we have placed the statue of another soldier of the Revolution. Nevertheless, it is a pleasure to associate with the name of Washington, the name of a Marylander subordinate to the great Commander, who like him fought, suffered, and triumphed; in war, a hero; in peace, a servant of the State; the patriot soldier, Colonel John Eager Howard.

From the days of Cincinnatus until recent times there have been commanders who laid down their swords when strife was ended, and who engaged in the pursuits of civil life until called by their countrymen to renewed service in the councils of the government. At Annapolis, in a chamber which should be forever sacred as one of the shrines of American patriotism, Washington surrendered his com-

mission, and thence he returned, soon afterwards, to his home at Mt. Vernon, where he remained until the people made him President. In like manner, in a less conspicuous but not less patriotic way, Howard, after the years of military privation and perils were passed, found repose in Belvedere, his country-seat, remaining the foremost citizen of Baltimore until he was chosen first the Governor of Maryland and afterwards a Senator of the United States. Despondent Americans sometimes express the fear, if they do not suppress the hope, that from our democracy an imperial monarchy will arise, and that some Cæsar or Napoleon will assume the power of a dictator; but such a possibility, to us abhorrent, will never become a reality among those who cherish the words and the examples of Washington and Howard.

In travelling through this and other lands, it is interesting to note the various embodiments in sculpture of popular affection for heroes. In Rome on the Capitoline hill stands one of the noblest remains of ancient art,—the statue of Marcus Aurelius Antoninus,—and as if stimulated by this remembrance, almost every city of Italy has its statues of Garibaldi, Cavour, and Victor Emmanuel. Near the banks of the Neva, Catherine the Second placed on a mass of granite the spirited figure of Peter the Great. In the capital of Prussia, Frederick the Great is honoured by one of the finest monuments of modern art, the superb work of Rauch. On the Rue de Rivoli in Paris, the very sculptor whose work is before us, has modelled an equestrian figure of the far-famed deliverer of France, the Maid of Orleans. In London, Nelson's column overlooks Westminster. The dome of St. Paul's covers the monument of the Iron Duke as the dome of the Invalides in Paris enshrines the remains of his antagonist. There are statues of Washington in Boston, New York, Philadelphia, Washington, and Richmond; lately, also, by the generosity of American women, in the capital of

France. To one of the greatest of living sculptors we owe the memorials of Farragut and Sherman in New York, of Shaw in Boston, and of Lincoln in Chicago. The city of Washington has many equestrian statues. Richmond has its Robert E. Lee. These are but examples of the homage paid to wisdom, courage, and self-sacrifice,—monuments, often, but unfortunately not always, produced by artists of genius, usually if not always evoked by sentiments of the loftiest patriotism.

The statue now erected in Baltimore is certainly worthy to be named among those already mentioned, both because of its distinction as a work of art by one of the foremost sculptors in the city of Paris, the focus of modern art, and also because of the man commemorated. It is a tribute of admiration and affection from certain members of the Municipal Art Society of Baltimore who cherish with gratitude the memory of Howard. The work of the artist, M. Frémiet, sustains his high reputation. The details of costume and equipment in the time of the Revolutionary War have been carefully reproduced. The attitude and expression of the hero are dignified and spirited. Henceforward, the citizen in his daily walks, the stranger as he enters the city, the student as he goes to the library, the children as they gather about the monument of Washington, will be attracted by this figure, and as they think of the person thus honoured, seventy-six years after his death, they will learn a lesson of patriotism, courage, public spirit and good citizenship. If they inquire, they will be told that among the men of Maryland, in the formative period of this nation, none served the commonwealth better than the friend of Washington and Lafayette; the supporter of Greene; in "times that tried men's souls," the unflinching patriot, brave on many battle-fields; in the public councils, a wise and unblemished statesman; throughout his life the public-spirited benefactor of Baltimore.

Howard does not stand alone among the worthies of

Maryland commemorated by their grateful fellow-citizens. In the national capitol, the Legislature has placed the statues of John Hanson and Charles Carroll; near the state-house in Annapolis we are reminded of the gallantry of that great leader of the Maryland Line, General DeKalb. There is a truly speaking likeness of Chief Justice Taney in the statue by our own Rinehart. The figure of George Peabody has been placed in front of the athenæum which he founded. Soon, in a public place, we shall see a representation of one whose departure we still mourn, whose pen still counsels, whose example still inspires the young men of Baltimore—Severn Teackle Wallis. Hereafter, others will thus be brought to remembrance by the sculptor's art. Among them, there should certainly be a tribute to the founder of the university and hospital which have brought so much distinction and benefit to this city. There are other heroes of the Revolution, of whom we are reminded by the life and services of Howard, especially participants in the Southern campaign. General Gist, General Otho H. Williams, General Smallwood, and Colonel John Gunby.

In order that justice may be done to the career of a man of mark, it is necessary to consider the times in which he lived and the opportunities which were opened to him. If "all the world's a stage and all the men and women merely players," we must give heed to the scenes, the accessories and the associated characters of the drama. A great historian, whose graphic style fixes the attention of every reader quite as firmly as Macaulay's, has acknowledged his obligations to Shakespeare's dramatic treatment of historic events. He presents the stage, the actors and the deeds. For a study of the American Revolution, the material is superabundant. The story of that great series of events has been told again and again, not only by annalists and biographers, but by historians, many of whom had rare gifts of expression and knew how to omit the unessential from their narratives and

give emphasis to important crises; therefore a few words only will be needed to remind you of the circumstances under which the character of Howard was developed. The pages of Lee, Marshall, Tarleton, Greene, Bancroft, Fiske, Trevelyan, Wilson, Doyle and recently of McCrady are accessible to those who wish for a closer study of the period. In a cursory way, it may be said that the Revolutionary War was fought in three regions,—north of the Potomac, south of the Potomac, and west of the Alleghenies. The engagements in the West are less vividly remembered, but the work of George R. Clark and his followers secured to the Americans the permanent possession of the Ohio valley. Campaigns in the North began in 1775, in eastern Massachusetts, and continued with varying results until the close of the war, chiefly on the seaboard and in the natural highway to Canada by the Hudson River and the Lakes George and Champlain. The most decisive battle was fought in October, 1777, at Saratoga, when the British army met with disastrous defeat and General Burgoyne surrendered. The fighting continued notwithstanding this victory, and the names of many a battlefield in New York, New Jersey, and Pennsylvania recall the patience and the bravery of the American army. The Southern campaigns began with the British capture of Savannah and the subsequent capture of Charleston and the adjacent seaboard, so that in 1780 Cornwallis was ready to begin his strenuous endeavours to recover in the South the prestige which Burgoyne had lost in the North. His efforts were largely directed toward the suppression of all patriotic sentiments among the inhabitants of Georgia and the Carolinas. He was gradually led to take up his position at Yorktown, where the American and French forces compelled his surrender. By the defeat of Cornwallis the war was virtually closed, and the independence of the United Colonies, proclaimed five years before, was secured.

Such was the drama of the Revolution. Let us now see the entrance upon the stage of Howard, the man whom we are assembled to honour.

When the gales, foretold by Patrick Henry, in words that every schoolboy used to know by heart, had swept from the North and brought to the listening ears of anxious Southerners the clash of resounding arms, Maryland was ready to do her part in support of the principles of independence. Among the earliest to enlist was James McHenry, who began as an army surgeon and who rose by his merits to the post of Secretary of War under Washington and Adams. His monument is Fort McHenry, in the harbour, over which the Star Spangled Banner "still waved" on a memorable morning in 1814.

Another young man, then twenty-four years old, of good family and education, living in circumstances of comfort if not of affluence, in Baltimore County, joined the army, in 1776. Even two years earlier, in November, 1774, he had taken part in those patriotic proceedings of the people of Maryland which established the principle of independence. He was offered the commission of a colonel, but with the modesty which characterised his life, he declined the responsibility of that position and instead of it accepted the commission of a captain, in what was called "the flying camp," commanded by Colonel J. Carvel Hall. In two days Captain John Eager Howard had recruited a company and with it he marched toward the scene of action in the North, where his services began in the battle of White Plains. Shortly afterwards his corps was dismissed, and the captain was promoted to be a major in one of the battalions of the line, then enlisted by Congress for the war. The "Maryland Line" having completed its organisation in the spring of 1777, Howard, with his command, joined the army in New Jersey and remained with it until his father's death compelled a return to Baltimore. After a short respite, he

went back to his post and took part in the battle of Germantown, where Maryland troops formed a considerable part of Sullivan's division on the right of the army. As the colonel of his regiment was disabled the command of it devolved upon Howard. It is an oft-noted coincidence that the house of Chief Justice Chew, which proved to be a castle for the British commander, a temporary fortress, as it was called, was the summer residence of the future Mrs. Howard. The Americans were unsuccessful, chiefly because a dense fog hung over the region and prevented the transmission of orders and the concentration of effort. There is extant a vivid account of this battle, written by Colonel Howard, which distinctly shows the brave and determined action of his regiment. The battle of Monmouth followed and with it closes the first chapter of Howard's experience.

The second chapter is more eventful. The troops of Maryland and Delaware were ordered to the relief of Charleston, and Howard, then lieutenant-colonel of the Fifth Maryland Regiment in the army of the United States, prepared to go with them. Several hotly contested battles were fought with alternating defeats and victories, Cornwallis trying to secure complete control of the Carolinas, before carrying the war into Virginia. The result was Yorktown.

The country traversed by the contending forces includes the States of Georgia, North and South Carolina, and a part of Southern Virginia. It lies east of the mountains and descends from a piedmont or plateau region to the seaboard, where the harbours already named attracted the enemy. The tract is crossed by many streams, flowing to the ocean in a southeasterly direction and easily crossed by fords in their upper courses. In this region, besides the cities of the coast, the strategic points were Camden, Augusta, and Ninety-Six, where important roads converged. The inhabitants of this country were not of one mind. Many of them were

loyal to the crown; more espoused the cause of independence and liberty; some were on both sides,—according to the fortunes of war. Indeed, the campaigns had many of the saddest characteristics of a civil war. In this up-river country there were marches and counter-marches of the hostile forces leading to engagements which were severe but not decisive.

Two foreigners who took part in the Southern campaign are worthy of remembrance here and now, Pulaski and DeKalb, the Pole and the German. One fell in the siege of Savannah, one in the battle of Camden; both deserve our grateful homage. DeKalb brought the prestige of one who had been trained in the best of European schools,—an Alsatian, who had been a brigadier in the French army, had been encouraged by Franklin and Silas Deane to join the American forces, and had been intrusted by Washington with important commands. A little imagination will suggest the impression made by this famous soldier upon the young men of Maryland.

There is a contemporary account of the campaigns of 1780-1 so short that none need pass it by, so trustworthy that all may accept it. It comes from the pen of one of the best writers and one of the greatest statesmen of the period,—James Madison, then recently graduated from Princeton College and afterwards President of the United States.

With the ultimate victory, it is well to bring into contrast the previous desperation. When Greene had been in command about six weeks, eight days before Cowpens, he was so dismayed that he wrote these words: "The wants of this army are so numerous and various that the shortest way of telling you is to inform you that we have nothing. We are living upon charity and subsist by daily collections." There had been a series of changes and misfortunes. Pulaski was killed at Savannah, Lincoln had been succeeded by De-

Kalb, DeKalb had given way to Gates, the hero of Saratoga, and Gates gave way to Greene.

The campaigns in the interior begin with the battle of Camden, in the northern part of South Carolina, where Gates met Cornwallis. It is no pleasure to recall that battle, for in it the Americans were wofully beaten. One historian says: "Never was victory more complete or defeat more total"; too strong a statement, for, although the Americans were driven back after a bloody encounter, the enemy was not equal to pursuit. We have also the satisfaction of knowing that the Maryland soldiers were not wanting in discipline and courage.

Soon followed the battle of King's Mountain (October 7, 1780), when the tide turned. Major Ferguson had been sent by Cornwallis to scour the western part of South Carolina and join him at Charlotte, N. C. This brilliant partisan leader was pursued by a body of patriot forces, irregular but determined, who found him posted on King's Mountain. Here Ferguson, after a desperate resistance, was completely routed and he fell at the head of his regulars, shot by seven bullets. By this brilliant victory the Americans made up for their defeat at Camden.

Upon the third engagement I ask you to dwell, partly because of its great importance, partly because in it the Baltimore colonel won his greatest distinction,—the battle of Cowpens. In the northwest corner of South Carolina, near the boundary line, the opposing forces met at a place then called Hannah's Cow Pens,—part of a grazing establishment belonging to a man named Hannah.

Tarleton, the lieutenant of Cornwallis, and the subsequent historian of his Southern campaigns, commanded the British, and Morgan, brave General Daniel Morgan of Saratoga fame, was the lieutenant of General Greene. Many valiant men were there assembled. Morgan was splendid in his courage, wisdom, reputation, and patriotism. So was Wil-

liam Washington, kinsman of the Father of his country, a gallant leader of the cavalry. A little boy of fourteen saw the battle,—one who became the hero of New Orleans, General Andrew Jackson. The grandfather of Edwin Warfield, now Governor of Maryland, commanded a company. The fight continued but a short time. While it lasted, it was fierce. Howard, with his regiment of Marylanders, held the key to the situation and they took good care that the lock should not be forced by the soldiers of George the Third. The Maryland colonel proved himself equal to his opportunity. A moment's hesitation, a timid advance, a half-hearted leader might have lost everything. But Howard was quick to think, bold in action, inspiring as a leader. He won the battle, and it was won by the use of that formidable weapon,—the bayonet. The report of the commanding officer, General Greene, tells the story tersely. At a critical moment, he says, when the British were pressing hard upon the Americans, "Colonel Howard, observing this, gave orders to charge bayonets, which was done with such address that the enemy fled with the utmost precipitation and abandoned their artillery." Although afterwards freely employed by the Maryland line, we have the authority of Henry Lee for the statement that "at Cowpens the bayonet was first resorted to in the war"; and that of Morgan, the commanding officer, for saying that when the enemy showed signs of disorder, it was Colonel Howard who "gave orders for the line to charge bayonets, which was done with such address that the enemy fled with utmost precipitation. At the close of the engagement the swords of seven British officers were in the hands of Howard."

All the historians are agreed upon the importance of this engagement. It is characterised by Bancroft as the most astonishing victory of the war, and by Fiske in words of equal weight, as the most brilliant battle of the War of Independence. Congress was delighted. After days of

cloud and hurricane, sunshine had appeared. Courage and hope took the place of anxiety. Without delay, as an expression of gratitude, a gold medal was voted to Morgan and silver medals to William Washington and Howard. I hold before you the original Howard medal. On the obverse, a mounted horseman galloping forward, follows the flag of his country, while the angel of victory hovers near, ready to bestow a wreath of laurels. The inscriptions are in Latin. On one side it reads,—To John Eager Howard, leader of the infantry,—(thus in contrast with the medal given to William Washington as leader of the cavalry;) and on the reverse it declares that the medal is bestowed upon the recipient because he gave a brilliant example of military valour by his sudden attack upon the enemy, in the battle of Cowpens, January 17, 1781. There is good authority for saying that the French Academy was requested to furnish a design for this medal, and that its skilful execution is the work of the artist Duvivier. A replica of the medal I will ask Governor Warfield to accept as a memento of this celebration and also of the victory in which his ancestor took part.

Three months after the engagement at the Cowpens, the contending forces met again at Guilford Court House, where Marylanders of our day have placed a monument to commemorate the valour of their countrymen. The story has been recently told by those who are well qualified to do justice to the bravery there displayed on the 15th of March, 1781. Howard and Gunby led the first Maryland Regiment, again using the bayonet. Although Greene left the battlefield in British possession, the battle of Guilford "marks the end of British power in North Carolina." So says Bancroft. Fiske is even more explicit. "Guilford, tactically a defeat, strategetically a decisive victory, the most important since the capture of Burgoyne." A British historian truly says that the victory was so fruitless and the

losses so severe that the battle may be considered "as the first step in a series of movements which terminated in the overthrow of the British power in America."

Six weeks later the armies met again (April 25), at Hobkirk's Hill, two miles from Camden, so that the engagement has been called the second battle of Camden. Again the British gained the field but they did not hold it, and the commander, Lord Rawdon, retired toward Charleston.

In the early autumn the battle of Eutaw Springs was fought (September 8). General Greene, following the enemy, came upon them under Lieutenant-Colonel Stewart, about sixty miles from Charleston. Two severe engagements ensued with heavy losses on both sides, the Americans at first successful, then the British. As had happened before, the invaders retreated toward their base at Charleston, where they were shut up until the end came. General Greene's tribute to the Maryland line is this:

"Nothing could exceed the gallantry of the Maryland line. Colonels Williams, Howard, and all the officers exhibited acts of uncommon bravery; and the free use of the bayonet gave us the victory. Many brave fellows have fallen, and a great number of officers are wounded. Among the number is Lieutenant-Colonel Howard. The Maryland line made a charge that exceeded anything I ever saw. But, alas! their ranks are thin, and their officers are few."

The wound in the shoulder which Howard received in this battle was so severe that he was compelled to go home for surgical treatment, and thus he was unable to take part in the final scenes of the drama. The curtain fell when the combined armies of the North and South, with the aid of the fleet met Cornwallis on the historic peninsula between the York and the James, and the War of Independence was over.

Fighting ended, peace declared, the troops disbanded, Howard remained on his ancestral property in Baltimore,—

a town of possibly twenty thousand inhabitants, quite eclipsed in dignity by the capital, Annapolis. Although we have no such picture of colonial life in Baltimore as that which is given respecting Albany, by Mrs. Grant, in her Letters,—Mr. John P. Kennedy, in his address on "Baltimore long ago," gives a picture of the place not far from the year 1800. William Wirt, as late as 1822, describes the Washington monument as "indescribably striking from the touching solitude of the scene from which it lifts its head." Overlooking a rapid water course (which might have been "a joy forever" instead of a *cloaca maxima*), stood Belvedere, a spacious mansion surrounded by a wooded park, which extended from Jones's Falls beyond the site of the monument on the south, and beyond Howard Street on the west. Here was Howard's home during the later years of his life.[1] Here he received his neighbours and friends, as well as his companions in arms, who were passing through town on the great highway between the South and the North. Lafayette was the most distinguished of them all after Washington. The veteran of Belvedere was not idle. Personal affairs required much attention; but they did not preclude obedience to public duties.

The readiness with which the voters in this Republic turn to those who have won distinction in military action, when leaders are required, is certainly remarkable. Soldiers of the Revolution, of the War of 1812, of the Mexican War, of the Civil War, and of the Cuban War, have successfully been candidates for exalted stations in civil life, and in several instances have risen to the very highest posts. Nor does this indicate an extravagant admiration of military renown. Interference with civil rights or usurpation, in any form,

[1] He was born at the place settled by his grandfather in the "Garrison Forest." Belvedere was built on the property which came to him from his mother.—*Note by Mr. McHenry Howard, to whom the speaker was indebted for much valuable information.*

would be met with summary resistance,—no matter how great a favourite of the people might venture on this forbidden path. But these preferences for heroes are an indication that qualities developed in the service of the army,—courage, endurance, self-forgetfulness, power to control one's self and one's subordinates, obedience to authority and the subjection to the public good of all personal considerations,—command the confidence and receive the homage of the people when these qualities are brought clearly to their notice.

At frequent intervals Colonel Howard was called to the discharge of important civil functions. When only thirty-six years old he was chosen Governor of Maryland, and at forty-two he became a Senator of the United States. The duties of both high stations were performed acceptably and faithfully. He declined the office of Secretary of War urged upon him by Washington. Few of us will hesitate to say that the services of Howard rendered to the commonwealth in the advancing years of his life, when a wounded soldier might have claimed a dignified rest, are as worthy of remembrance as those of his military campaigns. Just think of them. An honourable descendant of this honourable man has placed in my hands a list of the stations to which Colonel Howard was called after 1783. It is a remarkable list,—one that is seldom equalled in the annals of American biography. Let me enumerate the more significant places: more than once a justice of the County Court; a Justice of the Orphans' Court; a delegate to the Congress of the Confederation; thrice Governor; for five years a State Senator; a presidential elector; a major-general of the militia of Maryland; president of the Maryland Society of the Cincinnati for twenty-three years; for seven years a Senator of the United States; brigadier-general in the United States army when a foreign war was expected; in the War of 1812, one of the committee of viligance and defence.

When the capitulation of Baltimore was suggested the aged hero said that he had four sons in the field and as much property at stake as most persons, but would rather see his sons slain and his property reduced to ashes than so far disgrace his country.

Not many manuscripts of Howard are known to me, except such as have been printed. The following letter, addressed to Robert Gilmor, from Philadelphia, June 26, 1788, deserves to be given, particularly because it shows the attitude of the writer respecting the adoption of the Federal Constitution:

I congratulate you on the interesting event of the ratification of the Federal Government by the State of New Hampshire. It now becomes a question with the States that have not adopted the Government, whether they will make a part of the union or not. In the present situation of affairs this is with them a serious question. Notwithstanding the objections to the Government that it will swallow up the state Governments, no person uninfluenced by selfish views can think that any State by withdrawing itself from the Union will be in a more eligible situation than those in the Union. The Government once established they in my opinion will soon become petitioners to be admitted, except those under the influence of turbulent men who wish to be at the head of a faction, or those whose interest it is to be without any Government. If Virginia follows the example of New Hampshire, we shall I hope secure to this country the blessings of peace and become respectable, which I hardly expect without some struggle.

When rupture with France was imminent at the close of the century, he was offered the appointment of brigadier-general under Washington, who was expected to command once more the United States army. When Baltimore was threatened by the British, in 1814, Howard, already more that sixty years old, came at once to the front. Thus interchanging the repose of a private citizen with the responsibilities of a public servant, he passed on to the age of seventy-five years and then, after a brief illness, expired.

"During the summer his strength had been evidently declining and his desire for life grew less and less. On the 3d of October he rode out on horseback and took cold, after which he was under the constant care of his physicians and of his family until he was released by death," October 12, 1827.

The funeral was attended from Belvedere and the procession moved, as the papers say, "through the park," Centre Street, Calvert Street, and Baltimore Street to the cemetery of St. Paul's Church, where a simple monument marks his resting place. Next day the Baltimore *American* contained an appreciative account of his life, evidently carefully prepared by a skilful writer, probably an eminent prelate. Some passages of it have been incorporated in almost all the notices of Colonel Howard that have since appeared.

On this occasion, after such a review, what words can be so fitting as those of General Nathanael Greene, second to Washington in the army of the Revolution, who expressed, in a letter which should be treasured as a priceless heirloom, more valuable than a patent of nobility, the sentiment —"Howard deserves a statue no less than the Roman and Grecian heroes."

The influence of this memorial will be perennial. If a foreign foe should ever again bring alarm to North Point, or if civic disorder or domestic anarchy should disturb these quiet streets,—the young men of Baltimore, trained in the national guard of the commonwealth, and thus accustomed to habits of obedience, fortitude and concerted action, will be inspired by the remembrance of the hero of Cowpens, and will emulate his valour.

Nor is that the only influence radiating from Monument Square. We are not all descended from the heroes of the Revolution, nor can all of us bear arms in the defence of liberty and law. A large proportion of the inhabitants of Baltimore are of foreign birth; the parents of many more

passed their childhood in distant lands. It is nobody's fault that they did not learn in the nursery to revere the name of Washington; that to them the burning of the *Peggy Stewart* has no significance; that Valley Forge awakens no sad memories, and Yorktown no exultation; that they know not the bridge where the embattled farmers stood who "fired the shot heard round the world"; and that the Cowpens is like a word in an unknown tongue. Shall I say it is their misfortune? No, rather say good fortune brought them to a land where civil and religious freedom, secured by the wisdom of great statesmen and defended by brave men, has produced conditions under which every man may worship God according to his own conscience, every child may receive a public education, may rise according to his virtue, industry, and talents, to thrift and contentment, and be qualified to take some part, if it be only the humble part of a voter, in maintaining the principles of good government. As they look upon the figure of Howard, let them be reminded that among his fellow-soldiers in the War of Independence were Montgomery, the Irishman; Kosciusko and Pulaski, the Poles; DeKalb and Steuben, the Germans; Rochambeau and Lafayette, the Frenchmen; and let them determine that the government, secured by such men, shall receive from their compatriots in the twentieth century the defence and support which are due to a priceless inheritance. We cannot be too mindful that on education, morality and religion, and on conscientious and self-sacrificing devotion to the public service, the State depends.

Still further gain may be expected from the transactions of this day. A complete century has passed since the man whom we commemorate served his countrymen on the battle-field and in the Senate. The entire country has profited by the exertions of Howard and his colleagues, and the Republic has not been ungrateful. Baltimore is especially indebted to him for the gifts which secured to us these

beautiful squares and the monument which crowns them; and more than this, for the public spirit shown in his devotion to the city of his lifelong residence, to his native State, and to the national government which he helped to found. May future generations admire his character and emulate his virtues. They constitute "a monument more enduring than brass." Gratitude, perpetual gratitude, is due from us and from our successors and descendants to those wise men among whom our hero served.

A great orator, closing his tribute to one who was in his time the greatest American statesman, remarks that in the relations of civilised life, there is no higher service which man can render to man than to preserve a wise constitutional government in healthful action; and he quotes from that "admirable treatise on the Republic of which some previous chapters have been restored to us after having been lost for ages," a sentence where Cicero "does not hesitate to affirm that there is nothing in which human virtue approaches nearer the divine than in establishing and preserving states," —*civitates aut condere novas, aut conservare jam conditas.*

In our day, many clouds hang over the skies. Problems of unprecedented perplexity present themselves to the consideration of thoughtful citizens. The student of history sometimes wonders whether popular government will prove adequate to the new demands. For one, I believe that it will. Already in the most distant of our possessions we have seen the introduction of sound political principles and methods, and the most ancient of empires bears witness to the conciliatory influence of American diplomacy. This benign influence will in the long run depend upon the action of the people. Let them keep informed of and adhere to the principles of the founders of the Republic; let the example and services be forever cherished of those who were the friends, colleagues, and co-workers with John Eager Howard.

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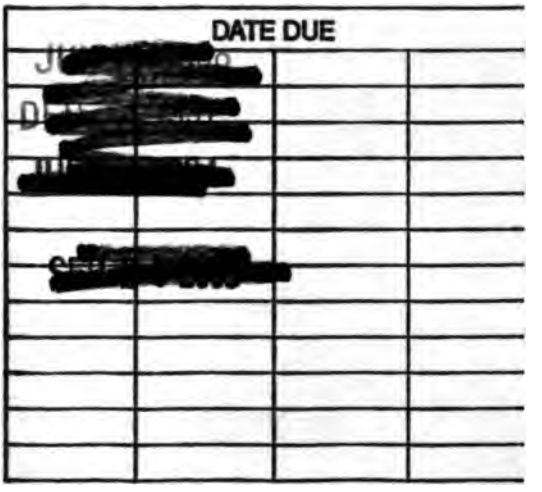




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